





**Jason Industrial**<sup>®</sup> is a Megadyne Group company that manufactures and delivers a comprehensive inventory of rubber and polyurethane synchronous belts, rubber v-belts, industrial hose and couplings, hydraulic hose and couplings, plus hardware to the industrial community worldwide.

When extraordinary needs require specialized components, we will work with you from prototype to production, creating custom solutions that suit your unique application.

As a Jason customer, you can feel confident in the quality and integrity of our products, the speed and efficiency at which they are delivered, and the expertise and customer focus that our local representatives are committed to providing.

Jason's corporate headquarters are based in Fairfield, New Jersey. Our distribution center is located just outside of Chicago, Illinois, with additional corporate offices in Canada, Mexico, Brazil and Colombia, as well as manufacturing, warehousing and distribution centers in cities across the globe.

Welcome to Jason...the first name in mechanical rubber and urethane products that power industry forward.





### **TABLE OF CONTENTS**



GENERAL INFORMATION / TECHNICAL REFERENCE:	8-17
ARPM Oil Resistance Guide	8
Cam & Groove Coupling Specifications	124
Care, Maintenance & Storage of Hose	17
Chemical Resistance Tables	159
- Rubber Hose - Oil & Solvent Resistance	160
- PVC, TPR, TPE & Polyurethane	172
- Coupling Material Corrosion Resistance	185
Common Terms	13
Commonly Used Rubber & Plastic Compounds Chart	14
Coupling & Accessories Intro Page	110
Couplings & Accessories Listings	6
Crimping Specifications	
- Assembly Procedure Recommendations	115
- 1-1/2" I.D Hose - Crimping Specifications	116
- 2" I.D Hose - Crimping Specifications	117
- 2-1/2" I.D Hose - Crimping Specifications	118
- 3" I.D Hose - Crimping Specifications	119
- 4" I.D Hose - Crimping Specifications	120
- 6" I.D Hose - Crimping Specifications	121
- At-A-Glance Ferrule/Sleeve Selection	122
Decimal, Millimeter, Fraction Equivalents	191
Flexibility and Bend Radius	8
Hose Selection (S.T.A.M.P.E.D.)	9
Hose by Series Listings	4
Hose by Market Listings	5
Flow Capacity of Hose Assemblies at Recommended Flow Velocities	12
Non-Cataloged Hose Request Form	14
Pressure Re-Rating Percentage for Increased Temps	11
Proper Grounding of Industrial Hose with Static or Helical Wires	15
Regulatory Organizations List	8
Steam Hose Safety Recommendations	86
Technical Information	
- Conversion Factors	193
- Pressure Rating Conversion Chart - PSI to Bar - Bar to PSI	196
- Vacuum Conversion Table for Water (Suction)	191
Temperature Conversion Chart	192
Terms and Conditions	199
Thread Chart	13

### **HOSES BY SERIES**

HOSE BY PRODUCT SERIES	Series	Page	HOSE BY PRODUCT SERIES	Series	Page
Polyurethane FDA USDA Material Hose $S\Omega$	3000	33	Nitirle/PVC Oil Resistant Discharge Hose - Black	4359	103
HD PVC USDA 3-A Liquid Food Suction Hos	e 3010	34	HD Oilfield Liquid Mud Discharge Hose -	4368 NE	w: 73
PVC FDA 3-A Liquid Suction Hose SΩ	3012	35	600 PSI		
HD Polyurethane Lined,	3020	41	Concrete Placement Hose - 800 PSI	4370	49
PVC Material Handling Hose			Concrete Placement Hose - 1300 PSI	4375	50
Polyurethane Material Handling and Duct Hos	se 3021	42	Non-Conductive Furnace Door Hose	4380	97
Medium Duty Polyurethane Lined Material Handling Hose	3022	43	Drilling Mud, Oilfield Suction and Discharge Hose - 150 PSI	4409 <b>NE</b>	w: 77
PVC Mulch Resurfacing Hose	3030	44	Blue Low Temp Petroleum Suction Hose -	4410	76
Abrasion Resistant SBR Material Handling Ho	se 3035	45	Corrugated		
Polyurethane Drop Hose for Suction and	3040	60	Oilfield Suction & Discharge Hose - 150 PSI	4411 NE	w: 78
Delivery of Gasoline and alternative fuels -	SΩ		Oilfield Vac Hose - 150 PSI	4413 NE	w: 79
Polyurethane Drop Hose for Suction and	3045	61	Nitrile Petroleum Suction Hose - 300 PSI	4414	69
Delivery of Gasoline and alternative fuels -	SΩ		Oil Return Hose 100R4	4415	80
Polyurethane Gasoline and	3050	62	Crude Oil Waste Pit Suction Hose -	4418	81
Alternative Fuel Vapor			Smooth Cover		
Recovery Hose - $S\Omega$			Crude Oil Waste Pit Suction Hose -	4419	82
HD Polyurethane Gasoline and	3053	63	Corrugated Cover		
Alternative Fuel Vapor			Nitrile Petroleum Suction Hose - 150 PSI	4420	66
Recovery Hose - $S\Omega$			Tank Truck Hose - Red Corrugated	4421	67
NBR/PVC Drop Hose for suction and delivery	/ 3058	59	Bio-Diesel/Ethanol Suction & Discharge Hose	4423	68
of gasoline - $S\Omega$			Nitrile Petroleum Suction Hose - 400 PSI	4424	70
HD Sub-Zero Cold Weather	3074	90	Hot Air Blower Hose	4425	47
Clear PVC Suction Hose			Dreamflex Petroleum Transfer & Suction Hose	4426 NE	w: 75
Heavy Duty PVC Suction & Transfer Hose	3076	88	Plaster and Grout Hose	4428	52
NBR/PVC Suction Hose	3080	89	Hot Tar & Asphalt Suction Hose - 150 PSI	4429	83
Oilfield Clean-Up & Spill Recovery Hose	3085	64	Cross-Linked Polyethylene Suction Hose	4430	30
Safety Oilfield Clean-Up and	3087	65	UHMWPE Chemical Suction Hose	4433	31
Recovery Hose - $S\Omega$			Oilfield Petro Waste Suction Hose	4436 NE	w: 74
Multi-Purpose TPR Hose - Black	4102	20	FRAC Water Suction Hose	4449	94
Red PVC Air Hose - Medium Oil Resistant	4103	19	Rubber Water Suction hose	4450	93
Multi-Purpose TPR Hose - Red	4105	21	FDA Bulk Food Suction Hose	4460	38
Jackhammer Hose Assembly - Yellow/Red	4121/4122	22	FDA Liquid Food Suction Hose	4465	39
EPDM/SBR Rubber Air/Water Hose -	4125/4129 N	<b>EW!</b> 23	Bulk Material Suction Hose	4470	46
Black/Red			Blue PVC Water Discharge Bulk Hose	4502	99
Bulk Pneumatic Deadman Twinline Hose	4142	24	and Assemblies		
MSHA Mine Spray Hose	4182	57	Wine Red PVC Water Discharge Hose	4504	100
Textile Reinforced Air Hose - 400 PSI	4302	25	and Assemblies - Medium Duty		
Textile Reinforced Air Hose - 300 PSI	4305	26	FDA Braided PVC Hose	4511	36
Gunite Hose	4310	51	Red PVC Water Discharge Hose - Heavy Duty	4515	101
2-PLY Sandblast Hose	4312	53	FDA Spring Wire PVC Hose	4600	37
Lightweight Sandblast Hose	4313	54	Green PVC Water Suction Hose	4601	91
4-Ply Sandblast Hose	4314	55	Clear/White Helix PVC Water Suction Hose	4615	92
1/8" Tube Sand & Dry Cement, Powder Discharge Hose	4322	48	Heavy Duty Double Jacket Mill Discharge Hose and Assemblies	4703	104
3/16" Tube Sand & Dry Cement,	4323	48	Municipal Grad SJ Mill	4705	105
Powder Discharge Hose 1/4" Tube Sand & Dry Cement,	4324	48	Discharge Hose and Assemblies  MSHA Fire Hose Assemblies	4735	106
Powder Discharge Hose	4024	40	Wire Reinforced Air Hose	4805	27
Nitrile Fuel Discharge Hose - 300 PSI	4328	71	Hi-Temp Air Hose - Wire Reinforced	4807	28
Frack Oilfield Fuel Discharge Hose - 400 PSI	4348	72	EPDM Steam Hose	4815	20 85
Rubber 2-Ply Water Discharge Hose	4340	95	Mainstream™ Pressure Washer Assemblies	5823	98
Rubber 4-Ply Water Discharge Hose	4354	96	SBR Skirtboard Rubber - Beveled Edge	6340	108
Nitrile/PVC Oil Resistant Discharge Hose -	4358	102	SBR Skirtboard Rubber - Square Edge	6341	109
Yellow	+000	102	Obi i Onitabala Habbol - Oquale Lage	00+1	103
. 311011			•		

### **HOSES BY MARKET**

AIR HOSE	Series	Page
Multi-Purpose TPR Hose - Black	4102	20
Red PVC Air Hose - Medium Oil Resistant	4103	19
Multi-Purpose TPR Hose - Red	4105	21
Jackhammer Hose Assembly - Yellow/Red	4121/4122	22
EPDM/SBR Rubber Air/Water Hose - Black/Red	4125/4129 NEW!	23
Bulk Pneumatic Deadman Twinline Hose	4142	24
Textile Reinforced Air Hose - 400 PSI	4302	25
Textile Reinforced Air Hose - 300 PSI	4305	26
Wire Reinforced Air Hose	4805	27
Hi-Temp Air Hose - Wire Reinforced	4807	28
CHEMICAL HOSE	Series	Page
Cross-Linked Polyethylene Suction Hose	4430	30
UHMWPE Chemical Suction Hose	4433	31
FOOD HOSE	Series	Page
Polyurethane FDA USDA Material Hose $$ S $\Omega$	3000	33
HD PVC USDA 3-A Liquid Food Suction Hose	e 3010	34
PVC FDA 3-A Liquid Suction Hose $S\Omega$	3012	35
FDA Bulk Food Suction Hose	4460	38
FDA Liquid Food Suction Hose	4465	39
FDA Braided PVC Hose	4511	36
FDA Spring Wire PVC Hose	4600	37
MATERIAL HANDLING HOSE	Series	Page
HD Polyurethane Lined,	3020	41
PVC Material Handling Hose	0004	
Polyurethane Material Handling and Duct Hos		42
Medium Duty Polyurethane Lined Material Handling Hose	3022	43
PVC Mulch Resurfacing Hose	3030	44
Abrasion Resistant SBR Material Handling Ho	se 3035	45
Gunite Hose	4310	51
2-PLY Sandblast Hose	4312	53
Lightweight Sandblast Hose	4313	54
4-Ply Sandblast Hose	4314	55
1/8" Tube Sand & Dry Cement, Powder Discharge Hose	4322	48
3/16" Tube Sand & Dry Cement,	4323	48
Powder Discharge Hose		
1/4" Tube Sand & Dry Cement, Powder Discharge Hose	4324	48
Concrete Placement Hose - 800 PSI	4370	49
Concrete Placement Hose - 1300 PSI	4375	50
Hot Air Blower Hose	4425	47
Plaster and Grout Hose	4428	52
Bulk Material Suction Hose	4470	46
MINE SPRAY HOSE	Series	Page
MSHA Mine Spray Hose	4182	57
PETROLEUM HOSE	Series	Page
Polyurethane Drop Hose for Suction and	3040	60
Delivery of Gasoline and alternative fuels - S	SΩ	
Polyurethane Drop Hose for Suction and	3045	61
Delivery of Gasoline and alternative fuels - S Polyurethane Gasoline and Alternative Fuel	3050	62
Vapor Recovery Hose - $S\Omega$ HD Polyurethane Gasoline and Alternative Fuel Vapor Recovery Hose - $S\Omega$	el 3053	63
NBR/PVC Drop Hose for suction and delivery of gasoline - SΩ	3058	59
2.5.7.5.7.5. 9.6001110 - 0.12		

	BY MARKET		
١	PETROLEUM HOSE (CONTINUED)	Series	Page
l	Oilfield Clean-Up & Spill Recovery Hose	3085	64
l	Safety Oilfield Clean-Up and Recovery Hose -	3087	65
l	$\mathbb{S}\Omega$ Nitrile Fuel Discharge Hose - 300 PSI	4328	71
l	Frack Oilfield Fuel Discharge Hose - 400 PSI	4348	72
l	HD Oilfield Liquid Mud Discharge Hose - 600 PSI	4368 <b>NEW!</b>	73
I	Drilling Mud, Oilfield Suction and Discharge Hose - 150 PSI	4409 <b>NEW!</b>	77
l	Blue Low Temp Petroleum Suction Hose - Corrugated	4410	76
l	Oilfield Suction & Discharge Hose - 150 PSI	4411 NEW!	78
l	Oilfield Vac Hose - 150 PSI	4413 NEW!	79
l	Nitrile Petroleum Suction Hose - 300 PSI	4414	69
l	Oil Return Hose 100R4	4415	80
I	Crude Oil Waste Pit Suction Hose - Smooth Cover	4418	81
I	Crude Oil Waste Pit Suction Hose - Corrugated Cover	4419	82
l	Nitrile Petroleum Suction Hose - 150 PSI	4420	66
l	Tank Truck Hose - Red Corrugated	4421	67
l	Bio-Diesel/Ethanol Suction & Discharge Hose	4423	68
l	Nitrile Petroleum Suction Hose - 400 PSI	4424	70
l	Dreamflex Petroleum Transfer & Suction Hose	4426 NEW!	75
l	Hot Tar & Asphalt Suction Hose - 150 PSI	4429	83
l	Oilfield Petro Waste Suction Hose	4436 NEW!	74
l	SKIRTBOARD RUBBER	Series	Page
l	SBR Skirtboard Rubber - Beveled Edge	6340	108
l	SBR Skirtboard Rubber - Square Edge	6341	109
l	STEAM HOSE	Series	Page
l	EPDM Steam Hose	4815	85
l	WATER HOSE	Series	Page
I	HD Sub-Zero Cold Weather Clear PVC Suction Hose	3074	90
l	Heavy Duty PVC Suction and Transfer Hose	3076	88
l	NBR/PVC Suction Hose	3080	89
l	Rubber 2-Ply Water Discharge Hose	4352	95
l	Rubber 4-Ply Water Discharge Hose	4354	96
I	Nitrile/PVC Oil Resistant Discharge Hose - Yellow	4358	102
l	Nitirle/PVC Oil Resistant Discharge Hose - Black	4359	103
l	Non-Conductive Furnace Door Hose	4380	97
l	FRAC Water Suction Hose	4449	94
l	Rubber Water Suction hose	4450	93
I	Blue PVC Water Discharge Bulk Hose and Assemblies	4502	99
I	Wine Red PVC Water Discharge Hose and Assemblies - Medium Duty	4504	100
١	Red PVC Water Discharge Hose - Heavy Duty	4515	101
١	Green PVC Water Suction Hose	4601	91
١	Clear/White Helix PVC Water Suction Hose	4615	92
١	Heavy Duty Double Jacket Mill	4703	104
١	Discharge Hose & Assemblies	7100	104
١	Municipal Grad SJ Mill	4705	105
١	Discharge Hose and Assemblies	1100	100
١	MSHA Fire Hose Assemblies	4735	106
١	Mainstream™ Pressure Washer Assemblies	5823	98
1	, , , , , , , , , , , , , , , , , , , ,	0020	$\sim$

### **COUPLINGS & ACCESSORIES**

BRASS BALL VALVES	Series	Page	INDUSTRIA
Brass Ball Valves - 600 to 400 WOG	BV	132	Couplers
Mini Ball Valves	MBV	133	Plug Competitive
CRIMP PRODUCTS	Series	Page	
Crimp Couplings	=	95	LOCKING L
Ferrules	-	96	Full Assembl
Sleeves	=	97	Male Ball x S
Assembly Procedure Recommendations	-	98	Male Ball x T
Crimp Specifications	=	99	O-Ring
Ferrule/Sleeve Wall Thickness	-	97	Lever Ring
At-A-Glance Ferrule/Sleeve Selection Chart	-	105	Female Sock
CAM & GROOVE	Series	Page	Female Sock
Cam & Groove Coupling Specifications	-	106	Male Ball x F
Male Adapter x Female thread	Α	108	
Female Coupler x Male Thread	В	108	
Female Coupler x Hose Shank	С	108	MENDER
Female Coupler x Female Thread	D	109	Tube Mende
Male Adapter x Hose Shank	Ε	109	
Male Adapter x Male Thread	F	109	NIPPLES
Anti-Leak Aluminum C x E Cam Lock Couplings	ALF	111	
Dust Cap	DC	110	Combination
Dust Plug	DP	110	Hex Male Co
Dust Cap with Lock-Out Handles	DCL	111	
Replacement Gaskets	S	117	NOZZLES
Replacement Handles	HRP SP	117	Straight Stre
Safety Pin Security Chain	SP CH	116 116	Fog
Vapor Recovery	VP	114	
Reducers/Adapters	-	112	011 0 040
Bands for Cam & Groove Fittings (NBR)	RB	111	OIL & GAS Strainers - Su
CAFETY CAM I COVING HANDI FO	0.1	-	Sight Glasses
SAFETY CAM - LOCKING HANDLES	Series	Page	Sight Glass F
Female Coupler x Male Thread	B-54S	113	Pump Plate S
Female Coupler x Hose Shank	C-54S	113	
Female Coupler x Female Thread Dust Cap	D-54S DC-54S	113 113	PIN LUG W
Sust Cap	DO 040	110	Aluminum wit
CLAMPS	Series	Page	Brass with Br
Double Bolt Hose	DB	129	Anti-Leak
Spiral Double Bolt	SDB	130	Replacement
Interlocking " Collar Grip" 2/4/6 Bolt	2/4/6BC	128	
5007 VALVEO			SANDBLAS
<b>FOOT VALVES</b> Foot Valves for Water Suction Hose - Painted Rec	Series D FV	Page	Hose End
-001 valves for vvaler Suction Hose - Painted Rec	ı rv	133	Nozzle Holde
GROUND JOINTS	Series	Page	Threaded Po Gaskets for N
Female Spud	GF	122	
Female	GJ	122	
Double Spud	GDS	122	STRAINERS
Male Spud	GMS	122	Round Hole
HVDDANT ADAPTEDS (CARS (SOLID) 5	_		Square Hole Tube
<b>HYDRANT ADAPTERS/CAPS/DOUBLE MAI</b> Brass	L <b>E</b> HAB	136	Top Hole
Diass Replacement Gasket	HAG	136	Bottom Hole
	1 1/7/4	100	1

INDUSTRIAL QUICK CONNECTS Couplers Plug Competitive Interchange	Series QC QP	Page 121 121 121
LOCKING LEVER PUMP COUPLINGS Full Assembly Male Ball x Shank Male Ball x Thread O-Ring Lever Ring Female Socket x Shank Female Socket x Thread Female Socket x Flange Male Ball x Flange	Series BGA BMS BMT BOR BLR BFS BFT BFF BMF	Page 125 124 124 124 125 124 125 125 125
<b>MENDER</b> Tube Mender	Series SM	Page 131
NIPPLES Combination & Victaulic Hex Male Collared	Series CN MS	Page 126 130
NOZZLES Straight Stream Brass Fog	Series BN FN	Page 134 134
OIL & GAS DRILLING Strainers - Sugar Cone Type Sight Glasses Sight Glass Flanges Pump Plate Strainers	Series  CS SGT SGF 25PS	Page 137 138 138 137
PIN LUG WATER Aluminum with Brass Swivel Brass with Brass Swivel Anti-Leak Replacement Washers	Series  AB  BR  AB  HW	Page 118 118 118 118
SANDBLAST Hose End Nozzle Holders Threaded Pot Ends Gaskets for Metal Hose/Pot End	Series Q NH SB QW	Page 123 123 123 123
STRAINERS  Round Hole Square Hole Tube Top Hole Bottom Hole	Series RHS SHS TRHS THS BHS	Page 136 136 136 136 136

### **COUPLINGS & ACCESSORIES**

COUP	LING	3 œ
TANK TRUCK ACCESSORIES	Series	Page
API Dust Cap	DC	115
API Coupler x Adapter	DA	115
API Coupler x Coupler	DD	115
Gasket for API Coupler	G	115
Male Adapter x Flange	A - 3F	116
Female Coupler x Flange	D - 3F	116
THERMOPLASTIC HOSE ACCESSORIES	Series	Page
Banding Coils	3098	139
Banding Sleeves	3099	139
UNIVERSAL AIR	Series	Page
Hose End 2 Lug	HE	119
Male End 2 Lug	ME	119
Female End 2 Lug	FE	119
Washer for 2 Lug	UG	119
3-Way Connector	TWC	120
Dead End	BEC	120
Safety Pin & Lanyard	SPL	120
Hose To Hose Cable	HHWC	119
Hose To Tool Cable	HTWS	119
Hose End 4 Lug	HE FF	120
Female End 4 Lug	FE UG	120 120
Washer for 4 Lug	UG	120
WASHERS	Series	Page
Spanner for Pin Lug Couplings	SW	135
Universal Spanner	US	135
Adjustable Hydrant	HYD	135







#### **REGULATORY ORGANIZATIONS LIST**

### Organizations Having Regulations or Specifications for Hose

#### **U.S. Government Agencies**

DOD Department of DefenseDOT Department of TransportationFDA Food and Drug Administration

**MSHA** Mine Safety and Health Administration

NHTSA National Highway Traffic Safety Administration
OSHA Occupational Safety & Health Administration

PHA Public Health Administration

USCG U.S. Coast Guard

**USDA** U.S. Department of Agriculture

#### **Canadian Agencies and Organizations**

**CGA** Canadian Gas Association

**CGSB** Canadian Government Specifications Board

RAC Rubber Association of Canada

CSA Canadian Specifications Association

#### **Other Organizations**

**ABS** American Bureau of Shipping

ANSI American National Standards Institute

API American Petroleum Institute

**ARPM** Association for Rubber Products Manufacturers

BIA Boating Industry Association
BSI British Standards Institute
CARB California Air Resource Board
CGA Compressed Gas Association
DIN Duetches Institut for Normung -

German Standards

DNV Det Norske Veritas

EN European Norms

FM Factory Mutual Research
FPS Fluid Power Society

ISO International Organization for Standardization

JIC Joint Industrial Council (now defunct)

JIS Japanese Industrial Standards
NAHAD National Association of Hose and

Accessories Distributors

NFPA National Fire Protection Association
National Fluid Power Association

RMA Rubber Manufacturers Association

(replaced by ARPM)

**ROHS** Restriction of Hazardous Substances **SAE** Society of Automotive Engineers

TFI The Fertilizer Institute
UL Underwriters Laboratories

#### **ARPM Oil Resistance Data**

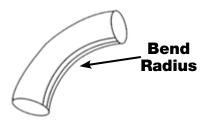
The effects of oil on rubber depend on a number of factors that include the type of rubber compound, the composition of the oil, the temperature and the length of exposure. The ARPM (replacing RMA) has developed a classification of hose performance based on simple immersions in ASTM No. 3 oil (High Swell) at 212° F for 70 hours. Oil resistance classifications for rubber stocks are shown in the table in the next column.

Hose Physical Properties After Exposure To Oil				
Classification	Volume Change MAX.	Tensile Strength Retained		
Class A (High Oil Resistance)	+25%	80%		
Class B (Medium-High oil Resistance)	+65%	50%		
Class C (Medium Oil Resistance)	+100%	40%		

#### **FLEXIBILITY AND MINIMUM BEND RADIUS**

#### **Minimum Hose Bend Radius Data (MBR)**

The Bend Radius is the radius of the bent section of a hose measured to the inner-most surface of the curved portion. It is important because the minimum bend radius is the maximum amount the hose can be bent without being kinked or damaged.



#### General formula to determine bend length:

Angle of Bend x  $2\pi$  = minimum length of hose to make bend 360° r = given bend radius of the hose

**Example:** to make a 90° bend with a hose with a 2" I.D.

Given r = 4.5 inches  $90^{\circ}$  (2 x 3.14 x 4.5)  $360^{\circ}$ 

 $.25 \times 2 \times 3.14 \times 4.5 = 7$  inches

7 inches is the minimum length the hose can be bent without damaging it. Remember that the bend should take place over the entire minimum length and not a portion of it. In addition, the formula does not mean that 7 inches will be long enough to meet application needs. It only means that if the 90° bend takes place in less than 7 inches, the hose could be damaged.

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#### I. HOSE SELECTION - STAMPED

It is important to have all the required information to select the proper hose for any hose application. The acronym **"STAMPED"** can be used to remember the required information as follows:

S stands for SIZE: I.D. and length; any O.D. constraints

- · overall length should be specified to include fittings
- tolerances need to be specified if special requirements exist

#### I.D., O.D. and overall length of the assembly

- To determine the replacement hose I.D., read the layline printing on the side of the original hose. If the original hose layline is painted over or worn off, the original hose must be cut an inside diameter measured for size.
- The inside diameter of the hose must be adequate to keep pressure loss to a minimum, maintain adequate flow, and avoid damage to the hose due to heat generation or excessive turbulence. The hose should be sized according to the nomographic chart at the end of this section.
- Length Tolerances:

Assembly Length Tolerance				
Inc	hes	Millim	neters	
Up to 18	+/- 0.125	Up to 450	+/- 3	
18 to 36	+/- 0.25	450 to 900	+/- 6	
36 to 50	+/- 0.50	900 to 1270	+/- 13	
Over 50	+/- 1%	Over 1270	+/- 1%	

• Flow Rate/Fluid Velocity - The flow rate of the system in conjunction with the inside diameter of the hose will dictate the fluid velocity through the hose. Typical fluid velocities can be seen in the nomographic chart found at the end of this section. Please consult Jason Industrial for specific recommended velocity ranges. Please note that suction line recommendations are different than pressure lines.

T stands for TEMPERATURE of the material conveyed and environmental conditions.

- Are there factors such as heat sources in the environment in which the hose will be used?
- Continuous (average) and minimum and maximum temperatures have to be specified for both the environment and material conveyed.
- Note if flame resistance or flammability will be an issue
- Sub-zero exposure
- Care must be taken when routing near hot manifolds and in extreme cases a heat shield may be advisable.
- Other things to consider: maximum intermittent ambient temperature, fluid temperature, ambient temperature and maximum temperature.



#### A stands for APPLICATION, the conditions of use

- Configuration/routing (add a sketch or drawing if applicable)
  - Is the hose hanging, laying horizontally, supported, unsupported (orientation and aspect of the hose)
  - What else is attached to the hose, any external load on the hose bend radius requirements, flexibility elongation considerations with working pressure
- Quantify anticipted movement and geometry of use requirements
- Intermittent or continuous service
- Indoor and outdoor use
- Unusual mechanical loads
- Excessive abrasion
- Electrical conductivity requirements
- Equipment type
- External conditions abrasion, oil (specify type), solvents(specify type), acid (specify type and concentration), ozone, salt water
- Hose now in use
  - Type of hose
  - Service life being obtained and description of failure or source of customer dissatisfaction
- Strength and frequency of impulsing or pressure spikes
- Non-Flexing applications (static), flexing applications (dynamic)
- Vacuum requirements

#### M stands for the MATERIAL or MEDIA being conveyed, type and concentration

- Are there special requirements for this hose tube
  - Any special specifications (or agency requirements) that need to be considered (e.g., FDA, API)
  - Will the material be continuously flowing, or sit in the hose for long periods of time (specify)
- Media velocity, flow rate
- Chemical name/concentration (MSDS)
- Solids, description and size
- Fluid Compatibility Some applications require specialized oils or chemicals to be conveyed thrrough the system. Hose
  selection must assure compatibility of the hose tube. In addition to the hose materials, all other components, which make
  up the hose assembly (hose ends, o-rings, etc.) must also be compatible with fluid being used. Depending on the fluid, your
  hose supplier may lower the maximum temperature or pressure rating of the assembly. When selecting any hose assembly,
  always consult Jason Industrial for recommendations.

#### P stands for the PRESSURE to which the assembly will be exposed

- System pressure, including pressure spikes. Hose assembly working pressures must be equal to or greater than the system
  pressure. Pressure spikes greater than the maximum working pressure will shortern hose life and must be taken into
  consideration.
- Temperature implications
- Vacuum considerations
- Maximum Operating Pressure This is the maximum pressure that the system should be exposed to in normal operating
  conditions. For hydraulic hose assemblies, this pressure should be indicated by the relief setting of the system. Both the
  hose and hose end should not be rated to a pressure less than the maximum operating pressure of the system.

**Pressure Spikes** - When a hydraulic system is subjected to a large load in a short period of time, the system pressure can overshoot the relief pressure and exceed the maximum operating temperature. Frequent pressure spikes can reduce the life of hydraulic hose assemblies In general, spiral hose constructions are better suited to high impulse applications, which involve flexing and large pressure spikes. However, there are specialized braided hoses available from Jason Industrial. Please consult us if there are multiple constructions which may meet your needs.

#### **E stands for ENDS**; style, type, orientation, attachment methods, etc.

- Uncoupled or coupled hose; hose with built-in fittings
- Specify end style (see couplings & accessories section of this catalog)
- Materials and dimensions (steel, stainless, etc.)
- Conductivity requirements

#### **D** stands for **DELIVERY**

- Specific to customer requirements
- Testing requirements
- Certification requirements
- Special packaging requirements
- Tagging requirements
- Also refers to Determined Overall Length when working with metal hose.



### II. PRESSURE RE-RATING PERCENTAGES FOR INCREASED TEMPERATURES

As temperatures go up, pressure ratings go down. When considering the proper hose for any application, check this table if temperature is a consideration in the decision. This table will indicate the percentage of the initial working pressure of the assembly by temperature.

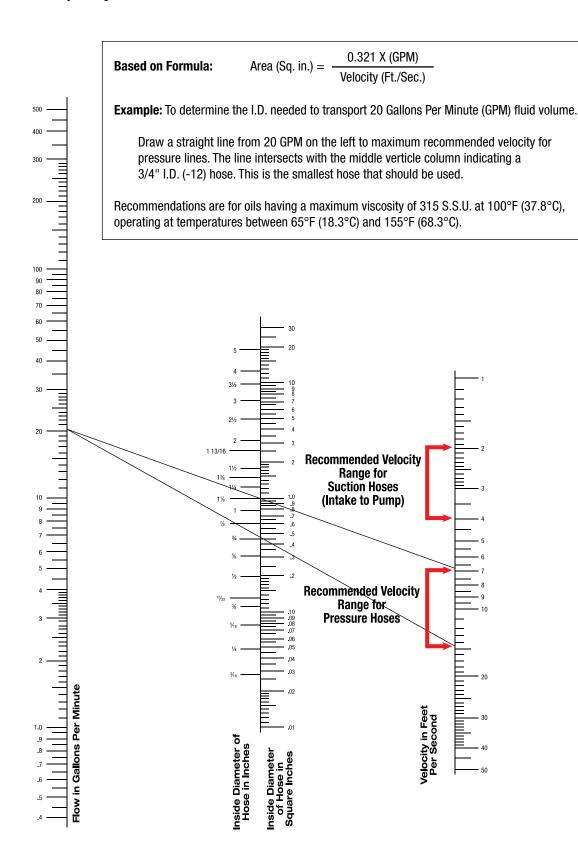
		Table 2	
Pressure Re-Rat	ting Perc	entages for Increased	<b>Temperatures</b>

Tempe	erature	PVC	Steam &	All Other	
°F	°C	Hose (%)	Hot Asphalt (%)	Hose Types (%)	
70	21	100	100	100	
90	32	82	95	91	
150	66	30	81	64	
200	93	N/R	68	42	
250	121	N/R	56	20	
300	149	N/R	44	N/R	
350	177	N/R	32	N/R	
400	204	N/R	20	N/R	
450	232	N/R	8	N/R	
500	260	N/R	N/R	N/R	
N/R = Not Re	N/R = Not Recommended				



### **NOMOGRAPHIC CHART**

Flow Capacity of Hose Assemblies at Recommended Flow Velocities





### **III. COMMON TERMS**

Term	Definition	Term	Definition	
I.D.	Inside diameter of hose opening	Weight/ft.	Weight per foot of hose	
O.D.	Outside diameter of hose	Bend Radius	The minimum radius to which the hose will bend before it is damaged	
Max W.P.	Maximum recommended working pressure	Ctondovd Longtho	The bulk length that the hose is	
PSI	Pressure in pounds per square inch	Standard Lengths	stocked for distributors	
Safety Factor  All hose has a minimum burst point or a safety factor. For example, an air hose with a 300psi working pressure and a 3:1 safety factor has a minimum burst of 900psi, or 3 times the working pressure. However, the working pressure and safety factor of an assembly can be significantly altered if incorrect fittings or clamps are used or if the assembly is improperly assembled. No hose is to ever be used at or near the burst pressure for any reason/do not exceed rated working pressure.				

### **IV. THREAD CHART**

Abbreviation	Thread Name	Seal Method	Thread Compatibility			
GHT	Garden Hose Thread	Washer Seal	GHT - GHT			
JIC 37° FLARE	Joint Industrial Council	Mechanical Seal	JIC Male - JIC Female			
NH OR NST	American Standard Fire Hose Thread National Hose or National Standard Thread	Washer Seal	NH or NST- NH or NST			
NPT	American Standard Taper Pipe Thread National Pipe Thread	Thread Sealant or Washer Seal	NPT - NPT or NPTF			
NPTF	American Standard Taper Pipe Fuel Dryseal National Pipe Tapered Fuel	Thread Sealant or Washer Seal	NPTF- NPTF or NPT			
NPSH	American Standard Straight Pipe for Hose Couplings  National Pipe Straight Hose	Washer Seal	NPSH - NPSH, or NPT			
NPSM	American Standard Straight Mechanical Joints National Pipe Straight Mechanical	Washer Seal or Mechanical Seal	NPSM - NPSM, NPT or NPTF			
SAE 45° FLARE	Society of Automotive Engineers	Mechanical Seal	SAE Male - SAE Female			

Note: Thread sealant is required for Thread Seal connections, except for NPTF during initial use

**Note:** Compatibility of thread type does not ensure eompatibility of fittings. Always use mating fittings of the same type



### **COMMONLY USED COMPOUNDS - RUBBER**

ASTM	Common Name	Composition	General Properties
AU or EU	Urethane	Polyester Urethane	Excellent abrasion, tear and solvent resistance, good aging. Poor high temperature properties
CR	Neoprene®*	Chloroprene	Good weathering resistance and flame retarding. Moderate resistance to petroleum-based fluids. Good physical properties.
EPDM	Ethylene Propylene Rubber	Ethylene-propylene diene- monomer	Excellent ozone, chemical and aging characteristics. Good heat resistance. Poor resistance to petroleumbased fluids
NBR	Nitrile	Acrylonitrile- butadiene	Excellent resistance to petroleum-based fluids. Moderate resistance to aromatics. Good physical properties.
NR	Natural Rubber	Isoprene, Natural	Excellent physical properties, including abrasion and low temperature resistance. Poor resistance to petroleum-based fluids.
SBR	SBR	Styrene-Butadiene	Good physical properties, including abrasion resistance. Poor resistance to petroleum-based fluids.
XLPE	Cross-Linked Polyethylene	Polyethylene and cross-linking agent	Excellent chemical resistance, with good heat and electrical properties.
* DuPont registered	trademark		

### **COMMONLY USED COMPOUNDS - PLASTIC**

ASTM	Common Name	Composition	General Properties					
PE	Polyethylene	Polyethylene	Excellent dielectric properties. Excellent resistance to water, acids, alkalis and solvents. Good abrasion and weathering resistance.					
UHMW-PE	UHMWPE	Ultra High Molecular Weight Polyethylene	Excellent resistance to a broad range of chemicals, excellent weight and abrasion resistance.					
PVC	PVC	Polyvinyl Chloride	Good weathering, moisture and flame resistance. General resistance to alkalis nd weak acids. Good abrasion resistance.					
TPE	Thermoplastic Rubber	Thermoplastic Polyolefins and Block Copolymers of Styrene and Butadiene	Good weathering and aging resistance. Good for water, diluted acids and bases					





## Important Instructions for Properly Grounding Industrial Hoses Containing Static Wires or Helical Wire

Warning User Responsibility: Flow of certain materials inside of a hose can cause a dangerous static charge to build up inside the hose. When the static charge reaches a sufficient level, it can shock or create an electrical discharge which can be deadly leading to fire and explosions.

Unless proper steps are taken during hose assembly, even hoses that have built in grounding wires (conductive wire or helical wire) will not provide sufficient grounding to eliminate static charge build up which can lead to property damage, injury, or death.

#### Step 1.

Identify the type of mechanism used in the particular hose for providing the grounding path.

#### Step 2.

The mechanism (the conductor being a special grounding wire or helical wire) must be carefully exposed on both ends of the length of hose and enough length (at least 1/2" or 13 mm) exposed to allow placement into direct contact of the clean metallic coupling insert. This is normally done by bending the wire into the inside of the tube surface which will provide sufficient contact with the insert. Care should be exercised that the tube is not damaged and that the length of conductor is not so long as to create a leak path along the insert.

#### Step 3.

Assemble the coupling as specified by the manufacturer. Suitable lubricant may be used that will not interfere with the conductive path.

#### Step 4.

After assembly, you must properly verify that the hose is conductive from end to end (10 Ohms or less). If not, the assembly is not suitable for use. It should be understood that both the points of connection to the hose must continue to provide conductivity to ground for the system. Special requirements beyond this level of conductivity may be required. If so, the assembler and user must take additional steps as may be required to assure compliance.



### **NON CATALOGED HOSE REQUEST**

While Jason catalogs many useful hose products for a multitude of applications, there is always the possibility that we may not catalog a hose item you need. By filling out this form, we will give our factories and Jason the opportunity to quote your request.

Company Nam			Contact	
Company Nam	e 		Contact	
Address			Phone	
City			E-Mail	
Salesman			Fax	
Is there a hose	we can cross o	ver?		
Manufacturer			Part Number	
Please fill in the	e blanks:			
ID	OD	WP PSI	Burst PSI	Length
Is this a suction	he following quest hose or a dischar	ge hose?		
If a suction hose	e, what vacuum is	required?		
What is the max	imum temperature	e of the material be	ing conveyed? F	
		ny pertinent inform pil/acid/chemical er	ation such as abrasion, ben nvironment.	d radius,
What end conne	ctions will be use	d and how will they	be attached?	
Are there specia	ıl requirements su	ch as color, static v	vire(s), approvals or brandin	g/layline?

### **CARE, MAINTENANCE & STORAGE OF HOSE**

Hose has a limited life and the use must be alert to signs of impending failure, particularly when the conditions of service include high working pressures and/or the conveyance or containment of hazardous materials. The periodic inspection and testing procedures described here provide a schedule of specific measures which constitute a minimum level of user action to detect signs indicating hose deterioration or loss of performance before conditions leading to malfunction or failure are reached.

General instructions are also described for the proper storage of hose to minimize deterioration from exposure to elements or environments which are known to be deleterious to rubber products. Proper storage conditions can enhance and extend substantially the ultimate life of hose products.

#### **General Care and Maintenance of Hose**

**SAFETY WARNING:** Failure to properly follow the manufacturer's recommended procedures for the care, maintenance and storage of a particular hose might result in the failure to perform in the manner intended and might result in possible damage to property and serious bodily harm.

Hose should not be subjected to any form of abuse in service. It should be handled with reasonable care. Hose should not be dragged over sharp or abrasive surfaces unless specifically designed for such service. Care should be taken to protect hose from severe end loads for which the hose or hose assembly were not designed. Hose should be used at or below its rated working pressure; any changes in pressure should be made gradually so as not to subject the hose to excessive surge pressures. Hose should not be kinked or be run over by equipment. In handling the large size hose, dollies should be used whenever possible; slings or handling rigs, properly placed, should be used to support heavy hose used in oil suction and discharge service.

#### **General Test & Inspection Procedures**

An inspection and hydrostatic test should be made at periodic intervals to determine if a hose is suitable for continued service. A visual inspection of the hose should be made for loose covers, kinks, bulges, or soft spots which might indicate broken or displaced reinforcement. The couplings or fittings should be closely examined and, if there is any sign of movement of the hose from the couplings, the hose should be removed from service. The periodic inspection should include a hydrostatic test for one minute at 150% of the recommended working pressure of the hose. An exception to this would be the woven jacketed fire hose.\* During the hydrostatic test, the hose should be straight, not coiled or in a kinked position. Water is the usual test medium and, following the test, the hose may be flushed with alcohol to remove traces of moisture. A regular schedule for testing should be followed and inspection records maintained.

Safety Warning: Before conducting any pressure tests on hose, provision must be made to ensure the safety of the personnel performing the tests and to prevent any possible damage to property. Only trained personnel using proper tools and procedures should conduct any pressure tests.

- Air or any other compressible gas must never be used as the test media because of the explosive action of the gas should a failure occur. Such a failure might result in possible damage to property and serious bodily injury.
- 2. Air should be removed from the hose by bleeding it through an outlet valve while the hose is being filled with the test medium.
- 3. Hose to be pressure tested must be restrained by placing steel rods or straps close to each end and at approximate 10' (3m) intervals along its length to keep the hose from "whipping" if failure occurs; the steel rods or straps are to be anchored firmly to the test structure but in such a manner that they do not contact the hose which must be free to move.
- 4. The outlet end of hose is to be bulwarked so that a blown-out fitting will be stopped.
- 5. Provisions must be made to protect testing personnel from the forces of the pressure media if a failure occurs.

- 6. Testing personnel must never stand in front of or in back of the ends of a hose being pressure tested.
- 7. If liquids such as gasoline, oil, solvent, or other hazardous fluids are used as a test fluid, precautions must be taken to protect against fire or other damage should a hose assembly fail and the test liquid be sprayed over the surrounding area.

#### **Storage**

Rubber hose products in storage can be affected adversely by temperature, humidity, ozone, sunlight, oils, solvents, corrosive liquids and fumes, insects, rodents and radioactive materials.

The appropriate method for storing hose depends to a great extent on the size (diameter and length), the quantity to be stored, and the way in which it is packaged. Hose should not be piled or stacked to such an extent that the weight of the stack creates distortions on the lengths stored at the bottom.

Since hose products vary considerably in size, weight and length, it is not practical to establish definite recommendations on this point. Hose having a very light wall will not support as much load as could a hose having a heavier wall or hose having a wire reinforcement. Hose which is shipped in coils or bales should be stored so that the coils are in a horizontal plane.

Whenever feasible, rubber hose products should be stored in their original shipping containers, especially when such containers are wooden crates or cardboard cartons which provide some protection against the deteriorating effects of oils, solvents, and corrosive liquids; shipping containers also afford some protection against ozone and sunlight.

Certain rodents and insects will damage rubber hose products and adequate protection from them should be provided.

Cotton jacketed hose should be protected against fungal growths if the hose is to be stored for prolonged periods in humidity conditions in excess of 70%

The ideal temperature for storage of rubber product ranges from  $50^{\circ}$  to  $70^{\circ}$ F ( $10-21^{\circ}$ C) with a maximum limit of  $100^{\circ}$ F ( $38^{\circ}$ C). If stored below  $32^{\circ}$ F ( $0^{\circ}$ C), some rubber products become stiff and would require warming before being placed in service. Rubber products should not be stored near sources of heat, such as radiators, base heaters, etc., nor should they be stored under conditions of high or low humidity.

To avoid adverse effects of high ozone concentration, rubber hose products should not be stored near electrical equipment that may generate ozone or be stored for any lengthy period in geographical areas of known high ozone concentration.

Hose should not be stored in locations where the ozone level exceeds the National Institute of Occupational Safety and Health's upper limit of 0.10 ppm. Exposure to direct or reflected sunlight-even through windows should also be avoided. Uncovered hose should not be stored under fluorescent or mercury lamps which generate light waves harmful to rubber.

Storage areas should be relatively cool and dark, and free from dampness and mildew. Items should be stored on a first-in, first-out basis, since even under the best of conditions, an unusually long shelf life could deteriorate certain rubber products.

- \*Woven jacket fire hose should be tested in accordance with the service test provisions contained in the current edition of the National Fire Protection Association Bulletin No. 1962 Standard for the Care, Use and Service Testing of Fire Hose.
- Reprinted with permission from the Association of Rubber Products Manufacturers (ARPM), Hose Handbook, RMA/IP-2/2003 (ARPM has replaced RMA)





Series	Description	Page
4102	Multi-Purpose TPR Hose - Black	20
4103	Red PVC Air Hose - Medium Oil Resistant	19
4105	Multi-Purpose TPR Hose - Red	21
4121/4122	Jackhammer Hose Assembly - Yellow/Red	22
4125/4129 NEW!	EPDM/SBR Rubber Air/Water Hose - Black/Red	23
4142	<b>Bulk Pneumatic Deadman Twinline Hose</b>	24
4302	Textile Reinforced Air Hose - 400 PSI	25
4305	Textile Reinforced Air Hose - 300 PSI	26
4805	Wire Reinforced Air Hose	27
4807	Hi-Temp Air Hose - Wire Reinforced	28

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.





### 4103

### **RED PVC AIR HOSE - MEDIUM OIL RESISTANT**







**CONSTRUCTION:** Tube and cover are PVC, smooth,

medium oil resistance, ARPM Class C. Cover is red. Reinforcement is one braid, synthetic material.

**TEMPERATURE:** -15°F (-26°C) to +150°F (+66°C)

BRANDING: ID XX" (XXmm) Jason logo WP PSI 4103

(Country of Origin).

**APPLICATION:** General purpose use, including air, water and mild chemical applications.

#### **FEATURES:**

- Oil mist resistant tube
- Non-marking cover
- Ozone and weather resistant
- Resistant to ultra-violet (UV) light rays

**SAFETY FACTOR: 3:1** 

Part	I.I	I.D.		.D.	Reinf. Braids		Max. W.P. @ 68° F		Weight		Minimum Bend Radius		Std. Length
Number	inch	mm	inch	mm	braius	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4103-0025-328	1/4	6.35	0.44	11.18	1	300	20.68	n/a	0.07	0.10	1.70	43.20	328
4103-0031-328	5/16	7.94	0.50	12.70	1	300	20.68	n/a	0.08	0.12	2.10	53.30	328
4103-0037-328	3/8	9.53	0.59	14.99	1	300	20.68	n/a	0.10	0.15	2.50	63.50	328
4103-0050-328	1/2	12.70	0.75	19.05	1	300	20.68	n/a	0.16	0.24	3.30	83.80	328
4103-0062-328	5/8	15.88	0.91	23.11	1	300	20.68	n/a	0.22S	0.33	4.20	106.70	328
4103-0075-164	3/4	19.05	1.05	26.59	1	215	14.81	n/a	0.28	0.42	5.00	127.00	164
4103A-0075-164*	3/4	19.05	1.10	28.00	1	300	20.68	n/a	0.30	0.45	5.00	127.00	164
4103-0100-164	1	25.40	1.33	34.00	1	170	11.71	n/a	0.41	0.61	6.70	170.20	164
4103A-0100-164*	1	25.40	1.33	34.00	1	300	20.68	n/a	0.44	0.66	6.70	170.20	164
	Coupled 1/4		pled 1/4	" Male NF	T x 1/4"	Male NP	x 50' Hos	e Assemb	ly				
4103-037450	3/8	9.53	0.59	14.99	1	300	20.68	n/a	0.10	0.15	2.50	63.50	50

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

\* 3/4 & 1" sizes in 300 PSI will replace the current part numbers of 4103-0075-164 & 4103-0100-164 when inventories are depleted



### 4102

### **MULTI-PURPOSE TPR HOSE - BLACK**







**CONSTRUCTION:** Tube and cover are TPR (NBR/PVC), smooth, high oil resistance, ARPM Class A. Cover is black Reinforcement is one braid, synthetic material.

**TEMPERATURE:** -15°F (-26°C) to +176°F (+80°C)

BRANDING: ID XX" (XXmm) Jason logo WP PSI 4102

(Country of Origin).

**APPLICATION:** For air, oil and medium grade fuels used in construction, shipyards, mining

and agriculture.

#### **FEATURES:**

- Class A oil mist resistant tube and cover
- Ozone and weather resistant
- Resistant to ultra-violet (UV) light rays

SAFETY FACTOR: 3:1

Part Number	I.I	I.D.		O.D.			Max. W.P. @ 68° F		Weight		Mini Bend	Std. Length	
Number	inch	mm	inch	mm	Braids	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4102-0025-328	1/4	6.35	0.44	11.18	1	300	20.68	n/a	0.07	0.10	1.70	43.20	328
4102-0031-328	5/16	7.94	0.50	12.70	1	300	20.68	n/a	0.08	0.12	2.10	53.30	328
4102-0037-328	3/8	9.53	0.59	14.99	1	300	20.68	n/a	0.10	0.15	2.50	63.50	328
4102-0050-328	1/2	12.70	0.75	19.05	1	300	20.68	n/a	0.16	0.24	3.30	83.80	328
4102-0062-328	5/8	15.88	0.91	23.11	1	300	20.68	n/a	0.22	0.33	4.20	106.70	328
4102-0075-164	3/4	19.05	1.05	26.59	1	215	14.81	n/a	0.28	0.42	5.00	127.00	164
4102-0100-164	1	25.40	1.33	33.73	1	170	11.71	n/a	0.41	0.61	6.70	170.20	164



### 4105

### **MULTI-PURPOSE TPR HOSE - RED**







CONSTRUCTION: Tube and cover are TPR (NBR/PVC),

smooth, high oil resistance, ARPM Class A. Cover is red. Reinforcement is one braid, synthetic material.

**TEMPERATURE:** -15°F (-26°C) to +176°F (+80°C)

**BRANDING:** 4105 JASON logo ID in. (mm.)

WP PSI MULTIPURPOSE-AIR-WATER-PETROLEUM ARPM CLASS A **APPLICATION:** For air, oil and medium grade fuels used in construction, shipyards, mining and agriculture.

#### **FEATURES:**

- Class A oil mist resistant tube and cover
- Non-marking cover
- Ozone and weather resistant
- Resistant to ultra-violet (UV) light rays

### **SAFETY FACTOR: 3:1**

Part Number	I.D.		O.D.		Reinf.	Max. W.P. @ 68° F		Vacuum	Weight		Min Bend	Std. Length	
Number	inch	mm	inch	mm	Braids	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4105-0025-328	1/4	6.35	0.44	11.18	1	300	20.68	n/a	0.07	0.10	1.70	43.20	328
4105-0031-328	5/16	7.94	0.50	12.70	1	300	20.68	n/a	0.08	0.12	2.10	53.30	328
4105-0037-328	3/8	9.53	0.59	14.99	1	300	20.68	n/a	0.10	0.15	2.50	63.50	328
4105-0050-328	1/2	12.70	0.75	19.05	1	300	20.68	n/a	0.16	0.24	3.30	83.80	328
4105-0075-164	3/4	19.05	1.05	26.59	1	215	14.81	n/a	0.28	0.42	5.00	127.00	164
4105A-0075-164*	3/4	19.05	1.10	28.00	1	300	20.68	n/a	0.30	0.45	5.00	127.00	164
4105-0100-164	1	25.40	1.33	34.00	1	170	11.71	n/a	0.41	0.61	6.70	170.20	164
4105A-0100-164*	1	25.40	1.33	34.00	1	300	20.68	n/a	0.44	0.66	6.70	170.20	164

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

\* 3/4 & 1" sizes in 300 PSI will replace the current part numbers of 4105-0075-164 & 4105-0100-164 when inventories are depleted

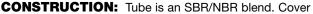


4121 4122

## JACKHAMMER HOSE ASSEMBLY - YELLOW JACKHAMMER HOSE ASSEMBLY - RED







is EPDM, yellow or red. Reinforcement is a two-spiral polyester yarn. Crimped coupling with universal end.

TEMPERATURE: -22°F (-30°C) to +176°F (+80°C)

BRANDING: ID 4121 or 4122 300 PSI WP Production Date.

**SAFETY FACTOR: 3:1** 





**APPLICATION:** For jackhammer applications. **FEATURES:** 

- Coupling crimped:
  - Better hose/coupling retention
  - No snagging
  - No leaking
- Easy to handle
- Weather, heat and ozone resistant
- Excellent abrasion resistance
- Hose WP is 300 PSI

Part	Cover Color	I.D.		O.D.		Reinf.	Max. W.P. @ 68° F**		Vacuum	Weight		Minimum Bend Radius		Std. Length
Number	Color	inch	mm	inch	mm	Spirals ·	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4121-0075-050	YELLOW	3/4	19.05	1.16	29.50	2	150	10.35	n/a	0.54	0.80	5.00	127.00	50
4122-0075-050	RED	3/4	19.05	1.16	29.50	2	150	10.35	n/a	0.54	0.80	5.00	127.00	50

<sup>\*\*</sup>Assembly working pressure. Hose WP is 300 PSI

Safety clip and lanyard not supplied. For safety reasons, please follow all OSHA regulations.



### 4125 4129

## EPDM/SBR RUBBER AIR/WATER HOSE - BLACK EPDM/SBR RUBBER AIR/WATER HOSE - RED









**CONSTRUCTION:** Tube and cover are EPDM/SBR,

red or black cover. Reinforcement is a

two-spiral polyester yarn.

**TEMPERATURE:** -14°F (-26°C) to +180°F (+82°C)

BRANDING: JASON logo ID in. 300PSI WP GP AIR WATER -

Yellow ink on black cover and black ink on red cover

**APPLICATION:** Economical general service hose for air

and water in industrial, agricultural and construction applications.

#### **FEATURES:**

- Excellent temperature resistance
- Abrasion and ozone resistant
- Flexible and easy to handle

**SAFETY FACTOR:** 3:1

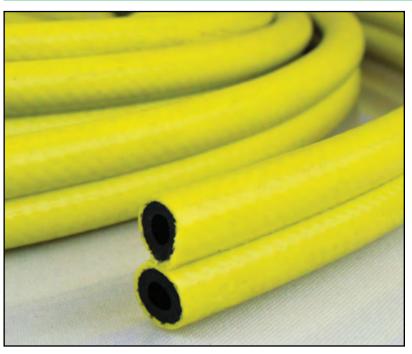
4125 BLA	4125 BLACK COVER														
Part Number	I.	D.	O.D.		Reinf. Spirals	Max. W.P. @ 68° F		Vacuum @ 68°F	Weight		Minimum Bend Radius		Std. Length		
Number	inch	mm	inch	mm	Spirais	PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)		
4125-04-600	1/4	6.35	0.49	12.50	2	300	24.13	n/a	0.10	0.15	1.50	38.10	600		
4125-05-600	5/16	7.94	0.57	14.50	2	300	24.13	n/a	0.12	0.18	2.00	50.80	600		
4125-06-600	3/8	9.53	0.65	16.50	2	300	24.13	n/a	0.17	0.25	2.25	57.15	600		
4125-08-600	1/2	12.70	0.81	20.50	2	300	24.13	n/a	0.22	0.33	3.00	76.20	600		
4125-10-300	5/8	15.88	0.96	24.50	2	300	24.13	n/a	0.30	0.45	3.75	95.25	300		
4125-12-300	3/4	19.05	1.14	29.00	2	300	24.13	n/a	0.37	0.55	4.50	114.30	300		
4125-16-300	1	25.40	1.38	35.00	2	300	24.13	n/a	0.58	0.86	7.00	177.80	300		

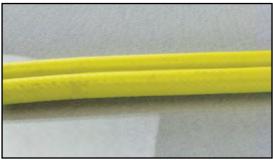
4129 RED	4129 RED COVER														
4129-04-600	1/4	6.35	0.49	12.50	2	300	24.13	n/a	0.10	0.15	1.50	38.10	600		
4129-05-600	5/16	7.94	0.57	14.50	2	300	24.13	n/a	0.12	0.18	2.00	50.80	600		
4129-06-600	3/8	9.53	0.65	16.50	2	300	24.13	n/a	0.17	0.25	2.25	57.15	600		
4129-08-600	1/2	12.70	0.81	20.50	2	300	24.13	n/a	0.22	0.33	3.00	76.20	600		
4129-10-300	5/8	15.88	0.96	24.50	2	300	24.13	n/a	0.30	0.45	3.75	95.25	300		
4129-12-300	3/4	19.05	1.14	29.00	2	300	24.13	n/a	0.37	0.55	4.50	114.30	300		
4129-16-300	1	25.40	1.38	35.00	2	300	24.13	n/a	0.58	0.86	7.00	177.80	300		



### 4142

### **BULK PNEUMATIC DEADMAN TWINLINE HOSE**







**CONSTRUCTION:** Tube and cover are TPR (NBR/PVC).

Cover is yellow. Reinforcement is two spirals, synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +180°F (+82°C)

**BRANDING:** Country of Origin

**SAFETY FACTOR: 3:1** 

**APPLICATION:** Used to pneumatically engage or

disengage the remote control on

sandblast machines.

### **FEATURES:**

- Oil resistant
- Bright yellow non-marking cover
- Siamese two line construction
- Heavy duty cover makes this a durable hose

Part	I.D.		O.D.		Reinf.	Max. W.P. @ 68° F		Vacuum	Weight		Minimum Bend Radius		Std. Length
Number	inch	mm	inch	mm	Spirals	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4142-0188-328	3/16	4.76	0.42	10.72	2	300	20.68	n/a	0.10	0.15	1.30	31.80	328



### 4302

### **TEXTILE REINFORCED AIR HOSE - 400 PSI**







CONSTRUCTION: Tube is a nitrile blend, smooth and

black. Cover is SBR, fabric impression, yellow, pin-pricked. Reinforcement is a two-ply

synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4302 TEXTILE AIR WP (PSI)

(BAR). Blue mylar longitudinal stripe.

**APPLICATION:** For tough applications in mines and quarries.

#### **FEATURES:**

- Oil mist resistant tube
- Bright yellow non-marking cover
- Medium high working pressure
- Weather and ozone resistant
- Excellent abrasion resistance

**SAFETY FACTOR:** 3:1

Part Number	I.D.		0	.D.	Reinf.	1	W.P. 8° F	Vacuum	We	ight		mum Radius	Std. Length
Number	inch	mm	inch	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4302-0050-050	1/2	12.70	0.91	23.11	2	400	27.58	n/a	0.32	0.48	6.00	152.40	50
4302-0075-050	3/4	19.05	1.18	29.97	2	400	27.58	n/a	0.40	0.60	7.50	190.00	50
4302-0100-050	1	25.40	1.46	37.08	2	400	27.58	n/a	0.54	0.80	10.00	254.00	50
4302-0150-050	1-1/2	38.10	2.05	52.07	2	400	27.58	n/a	0.92	1.37	15.00	280.00	50
4302-0200-050	2	50.80	2.64	67.06	2	400	27.58	n/a	1.37	2.04	20.00	508.00	50



### 4305

### **TEXTILE REINFORCED AIR HOSE - 300 PSI**







**CONSTRUCTION:** Tube is a nitrile blend, smooth and

black. Cover is Nitrile/SBR, fabric impression, yellow, pin-pricked. Reinforcement is a two-ply

synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4305 TEXTILE AIR WP (PSI)

(BAR). Blue mylar longitudinal stripe.

**APPLICATION:** For rugged air line service in mining, quarries, construction, sandblasting, industrial air placement and equipment rental.

#### **FEATURES:**

- Oil mist resistant tube
- Bright yellow non-marking cover
- Weather and ozone resistant
- Excellent abrasion resistance

**SAFETY FACTOR: 3:1** 

Part Number	I.	I.D.		.D.	Reinf. Plies	-	W.P. 8° F	Vacuum @ 68°F	We	ight		mum Radius	Std. Length
Number	inch	mm	inch	mm	Files	PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
4305-0050-100	1/2	12.70	0.91	23.11	2	300	24.13	n/a	0.32	0.48	6.00	152.40	100
4305-0075-100	3/4	19.05	1.18	29.97	2	300	24.13	n/a	0.40	0.60	7.50	190.00	100
4305-0100-050	1	25.40	1.46	37.08	2	300	24.13	n/a	0.54	0.80	10.00	254.00	50
4305-0100-100	1	25.40	1.46	37.08	2	300	24.13	n/a	0.54	0.80	10.00	254.00	100
4305-0125-100	1-1/4	31.75	1.81	45.97	2	300	24.13	n/a	0.81	1.21	12.50	320.00	100
4305-0150-100	1-1/2	38.10	2.05	52.07	2	300	24.13	n/a	0.92	1.37	15.00	381.00	100
4305-0200-100	2	50.80	2.64	67.06	2	300	24.13	n/a	1.37	2.04	20.00	508.00	100
4305-0250-100	2-1/2	63.50	3.15	80.01	2	300	24.13	n/a	1.69	2.51	25.00	635.00	100
4305-0300-050	3	76.20	3.70	93.98	2	300	24.13	n/a	2.16	3.21	30.00	762.00	50
4305-0300-100	3	76.20	3.70	93.98	2	300	24.13	n/a	2.16	3.21	30.00	762.00	100



### 4805

### **WIRE REINFORCED AIR HOSE**







**CONSTRUCTION:** Tube is nitrile blend, smooth and

black. Cover is SBR, yellow, fabric impression and pin-pricked. Reinforcement is two spiral wires.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4805 WIRE AIR WP (PSI) (BAR)

**SAFETY FACTOR:** 4:1

**APPLICATION:** For heavy duty air supply in mining, quarries, construction, industrial air placement, sandblasting and heavy duty

equipment rental.

### **FEATURES:**

- Oil mist resistant tube with high working pressure
- Bright yellow non-marking cover
- Heavy duty cover makes this a durable hose

Part Number	I	I.D.		.D.	Reinf.		W.P. @ ° F	Vacuum	We	ight		um Bend adius	Std. Length.
Number	inch	mm	inch	mm	Spirals	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4805-0050-050	1/2	12.70	0.91	23.11	2	600	41.37	n/a	0.36	0.54	5.50	140.00	50
4805-0050-100	1/2	12.70	0.91	23.11	2	600	41.37	n/a	0.36	0.54	5.50	140.00	100
4805-0075-050	3/4	19.05	1.22	30.99	2	600	41.37	n/a	0.60	0.89	8.30	210.00	50
4805-0075-100	3/4	19.05	1.22	30.99	2	600	41.37	n/a	0.60	0.89	8.30	210.00	100
4805-0100-050	1	25.40	1.49	37.85	2	600	41.37	n/a	0.80	1.19	11.00	280.00	50
4805-0100-100	1	25.40	1.49	37.85	2	600	41.37	n/a	0.80	1.19	11.00	280.00	100
4805-0100-200	1	25.40	1.49	37.85	2	600	41.37	n/a	0.80	1.19	11.00	280.00	200
4805-0125-050	1-1/4	31.75	1.81	45.97	2	600	41.37	n/a	1.05	1.56	13.80	350.00	50
4805-0125-100	1-1/4	31.75	1.81	45.97	2	600	41.37	n/a	1.05	1.56	13.80	350.00	100
4805-0150-050	1-1/2	38.10	2.04	51.82	2	600	41.37	n/a	1.24	1.85	16.50	420.00	50
4805-0150-100	1-1/2	38.10	2.04	51.82	2	600	41.37	n/a	1.24	1.85	16.50	420.00	100
4805-0200-050	2	50.80	2.60	66.04	2	600	41.37	n/a	1.80	2.68	22.00	560.00	50
4805-0200-100	2	50.8	2.60	66.04	2	600	41.37	n/a	1.80	2.68	22.00	560.00	100
4805-0200-200	2	50.80	2.60	66.04	2	600	41.37	n/a	1.80	2.68	22.00	560.00	200
4805-0250-050	2-1/2	63.50	3.15	80.01	2	600	41.37	n/a	2.40	3.57	27.50	700.00	50
4805-0250-100	2-1/2	63.50	3.15	80.01	2	600	41.37	n/a	2.40	3.57	27.50	700.00	100
4805-0300-050	3	76.20	3.70	93.98	2	600	41.37	n/a	3.22	4.79	33.10	840.00	50
4805-0300-100	3	76.20	3.70	93.98	2	600	41.37	n/a	3.22	4.79	33.10	840.00	100
4805-0400-050	4	101.60	4.88	123.95	2	600	41.37	n/a	4.70	6.99	44.10	1120.00	50
4805-0400-100	4	101.60	4.88	123.95	2	600	41.37	n/a	4.70	6.99	44.10	1120.00	100
4805-0600-050	6	152.40	6.89	175.01	2	600	41.37	n/a	6.82	10.14	63.00	1600.200	50
4805-0600-100	6	152.40	6.89	175.01	2	600	41.37	n/a	6.82	10.14	63.00	1600.200	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

All sizes may not be stocked in all locations. Check with customer service for availability. We disclaim any liability for use of our products in applications other than which they are designed.





### 4807

### **HI-TEMP AIR HOSE - WIRE REINFORCED**







**CONSTRUCTION:** Tube is a hydraulic oil mist resistant,

high heat synthetic rubber. Cover is

EPDM, yellow, pin-pricked. Reinforcement is a two-spiral wire.

**TEMPERATURE:** -40°F (-40°C) to +275°F (+135°C)

**BRANDING:** Jason logo 4807 HIGH HEAT WIRE AIR

275°F (+135°C) 600 PSI/41.4 BAR. Green

mylar longitudinal stripe.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** For heavy duty air supply where high temperature is required. For use with high-temperature compressors without an after-cooler, mining, quarries, construction, industrial air placement, sand blasting and heavy duty equipment.

#### **FEATURES:**

- Hydraulic oil resistant tube
- Bright yellow non-marking cover
- High working pressure
- Extreme heat resistance
- Abrasion and ozone resistant

Part Number	I.	I.D.		.D.	Reinf.		W.P. 8° F	Vacuum	We	ight		mum Radius	Std. Length.
Number	inch	mm	inch	mm	Spirals	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4807-0075-050	3/4	19.05	1.42	36.00	2	600	41.37	n/a	0.60	0.89	8.30	210.00	50
4807-0075-100	3/4	19.05	1.42	36.00	2	600	41.37	n/a	0.60	0.89	8.30	210.00	100
4807-0100-050	1	25.40	1.93	49.00	2	600	41.37	n/a	0.80	1.19	11.00	280.00	50
4807-0100-100	1	25.40	1.93	49.00	2	600	41.37	n/a	0.80	1.19	11.00	280.00	100
4807-0200-050	2	50.80	2.48	63.00	2	600	41.37	n/a	1.80	2.68	22.00	560.00	50
4807-0200-100	2	50.80	2.48	63.00	2	600	41.37	n/a	1.80	2.68	22.00	560.00	100
4807-0300-050	3	76.20	3.50	89.00	2	600	41.37	n/a	3,22	4.79	33.10	840.00	50
4807-0300-100	3	76.20	3.50	89.00	2	600	41.37	n/a	3.22	4.79	33.10	840.00	100

### **CHEMICAL HOSE**



# FOR IN-PLANT OR TANK TRUCK USE TO TRANSFER CHEMICALS & SOLVENTS

SERIES		PAGE
4430	Cross-Linked Polyethylene Suction Hose	30
4433	UHMWPE Chemical Suction Hose	31

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.





### **CHEMICAL HOSE**

### 4430

### **CROSS-LINKED POLYETHYLENE SUCTION HOSE**







CONSTRUCTION: Tube is clear, smooth cross-linked

polyethylene (XLPE). Cover is EPDM, green with fabric impression. Reinforcement is two plies of synthetic fabric with a wire helix and a copper static wire.

**TEMPERATURE:** -40°F (-40°C) to +150°F (+66°C)

**BRANDING:** Jason logo 4430 XLPE ACID CHEMICAL ID WP (PSI) (BAR). Blue mylar longitudinal stripe.

**APPLICATION:** For in-plant or tank truck use to transfer chemicals and solvents.

#### **FEATURES:**

- Versatile, it handles a variety of chemicals
- Handles 90% of the chemical/acid applications
- Reduces the need to stock several types of chemical hoses
- EPDM cover is heat, weather & abrasion resistant
- All sizes are full vacuum

**SAFETY FACTOR: 3:1** 

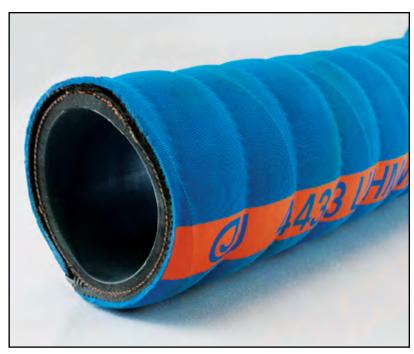
Part Number	I.D.		0	.D.	Reinf.		W.P. 8° F	Vacuum	We	eight		mum Radius	Std. Length
Number	inch	mm	inch	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4430-0075-100	3/4	19.05	1.19	30.23	2	200	13.79	29.9	0.36	0.54	6.00	152.40	100
4430-0100-100	1	25.40	1.50	38.10	2	200	13.79	29.9	0.49	0.73	6.50	165.10	100
4430-0125-100	1-1/4	31.75	1.75	44.45	2	200	13.79	29.9	0.55	0.82	9.00	228.60	100
4430-0150-100	1-1/2	38.10	2.09	53.09	2	200	13.79	29.9	0.69	1.03	10.00	254.00	100
4430-0200-100	2	50.80	2.61	66.29	2	200	13.79	29.9	0.98	1.46	12.00	304.80	100
4430-0250-100	2-1/2	63.50	3.19	81.03	2	150	10.35	29.9	1.35	2.01	15.00	381.00	100
4430-0300-100	3	76.20	3.75	95.25	2	150	10.35	29.9	1.90	2.83	16.00	406.40	100
4430-0400-100	4	101.60	4.88	123.95	2	150	10.35	29.9	2.57	3.82	18.00	457.20	100

### **CHEMICAL HOSE**

## JASON INDUSTRIAL SY MEGADYNE

### 4433

### **UHMWPE CHEMICAL SUCTION HOSE**







**CONSTRUCTION:** Tube is an Ultra-High Molecular

Weight Polyethylene (UHMWPE). Cover is EPDM, blue and corrugated. Reinforcement is a two-ply synthetic

fabric with a wire helix.

**TEMPERATURE:** -40°F (-40°C) to +150°F (+66°C)

BRANDING: Jason logo 4433 UHMWPE ACID

CHEMICAL ID WP (PSI) (BAR). Orange mylar longitudinal stripe.

**APPLICATION:** For in-plant or tank truck use to transfer chemicals and solvents.

### **FEATURES:**

- Corrugations make the hose flexible
- Handles 98% of the chemical/acid applications
- Reduces the need to stock several types of chemical hoses
- EPDM cover is heat, weather & abrasion resistant
- All sizes are full vacuum

**SAFETY FACTOR: 3:1** 

Part Number	I.D.		0	.D.	Reinf.	-	W.P. 8° F	Vacuum	We	eight		mum Radius	Std. Length.
Number	inch	mm	inch	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4433-0075-100	3/4	19.05	1.14	28.96	2	200	13.79	29.9	0.38	0.57	6.00	152.40	100
4433-0100-100	1	25.40	1.46	37.08	2	200	13.79	29.9	0.50	0.74	6.50	165.10	100
4433-0125-100	1-1/4	31.75	1.77	44.96	2	200	13.79	29.9	0.58	0.86	9.00	228.60	100
4433-0150-100	1-1/2	38.10	2.05	52.07	2	200	13.79	29.9	0.71	1.06	10.00	254.00	100
4433-0200-100	2	50.80	2.64	67.06	2	200	13.79	29.9	1.01	1.50	12.00	304.80	100
4433-0250-100	2-1/2	63.50	3.15	80.01	2	200	13.79	29.9	1.46	2.17	15.00	381.00	100
4433-0300-100	3	76.20	3.86	98.04	2	200	13.79	29.9	1.97	2.93	16.00	406.40	100
4433-0400-100	4	101.60	4.72	119.89	2	150	10.35	29.9	2.60	3.87	18.00	457.20	100



# FOR IN-PLANT OR TANK TRUCK USE TO TRANSFER FOOD GRADE PRODUCTS

SERIES		PAGE
3000 3010 3012 4460 4465 4511 4600	Polyurethane FDA USDA Material Handling Hose - SΩ HD PVC FDA USDA 3-A Liquid Food Suction Hose PVC FDA 3-A Liquid Suction Hose - SΩ FDA Bulk Food Suction Hose FDA Liquid Food Suction Hose FDA Braided PVC Hose FDA Spring Wire PVC Hose	33 34 35 38 39 36 37

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

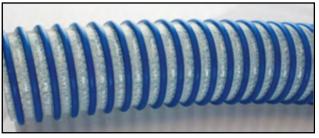
We disclaim any liability for use of our products in applications other than which they are designed.





### 3000 POLYURETHANE FDA USDA MATERIAL HANDLING HOSE - $S\Omega$







**CONSTRUCTION:** Polyurethane tube with high tensile

strength polyester yarn reinforcement.

Clockwise PVC helix with  $S\Omega$ 

ground wire.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Heavy duty food grade material

handling, railcar unloading, abrasive

suction and transfer.

#### **FEATURES:**

- Meets FDA requirements
- Approved by USDA for use in meat & poultry plants
- Clear visual flow and higher transfer pressures
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.
- -40°F cold weather resistance with sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix

Vacuum up to 29" of Hg

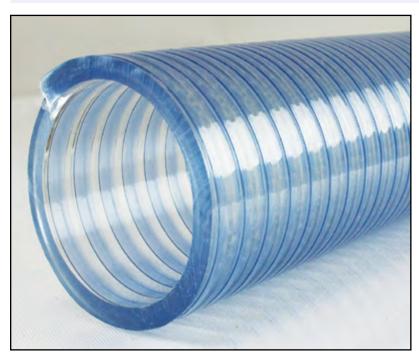
**SAFETY FACTOR:** 3:1

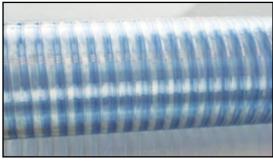
Part Number		I.D.		.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm	Braids	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3000-0300-100	3	76.20	3.80	96.52	1	70	4.83	29.0	1.20	1.79	4.00	101.60	100
3000-0400-100	4	101.60	4.85	123.19	1	65	4.48	29.0	1.60	2.38	6.00	152.40	100
3000-0500-020	5	127.00	5.80	147.32	1	45	3.10	29.0	2.46	3.66	10.00	254.00	20
3000-0500-050	5	127.00	5.80	147.32	1	45	3.10	29.0	2.46	3.66	10.00	254.00	50
3000-0500-100	5	127.00	5.80	147.32	1	45	3.10	29.0	2.46	3.66	10.00	254.00	100
3000-0600-020	6	152.40	6.92	175.77	1	40	2.76	29.0	2.86	4.26	12.00	304.80	20
3000-0600-050	6	152.40	6.92	175.77	1	40	2.76	29.0	2.86	4.26	12.00	304.80	50
3000-0600-100	6	152.40	6.92	175.77	1	40	2.76	29.0	2.86	4.26	12.00	304.80	100



### 3010

### **HD PVC FDA USDA 3-A LIQUID FOOD SUCTION HOSE**







**CONSTRUCTION:** PVC tube with a sturdy clockwise

PVC helix.

**TEMPERATURE:** -5°F (-23°C) to +140°F (+60°C)

**APPLICATION:** Transfer of food grade liquids, such as

juices, wine, beer and potable water

and dairy products.

#### **FEATURES:**

- Meets FDA requirements
- Approved by USDA for use in meat and poultry plants
- Meets 3-A sanitary standards, which includes processing dairy products
- Clear visual flow
- Vacuum up to 29" of Hg

**SAFETY FACTOR: 3:1** 

Part Number	I	I.D.		.D.	Reinf.		. W.P. 8° F	Vacuum @ 68°F	We	ight		mum Radius	Std. Length.
Number	inch	mm	inch	mm		PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
3010-0100-100	1	25.40	1.24	31.50	PVC Helix	71	4.90	29.9	0.26	0.39	3.00	76.20	100
3010-0125-100	1-1/4	31.75	1.54	39.12	PVC Helix	64	4.41	29.9	0.34	0.51	4.00	101.60	100
3010-0150-100	1-1/2	38.10	1.82	46.23	PVC Helix	57	3.93	29.9	0.44	0.65	6.00	152.40	100
3010-0200-100	2	50.80	2.39	60.71	PVC Helix	57	3.93	29.9	0.74	1.10	8.00	203.20	100
3010-0250-100	2-1/2	63.50	2.93	74.42	PVC Helix	57	3.93	29.9	1.01	1.50	10.00	254.00	100
3010-0300-100	3	76.20	3.43	87.12	PVC Helix	57	3.93	29.9	1.21	1.80	12.00	304.80	100
3010-0400-100	4	101.60	4.53	115.06	PVC Helix	43	2.97	29.9	2.02	3.01	15.00	381.00	100



### 3012

### PVC FDA 3-A LIQUID SUCTION HOSE - $S\Omega$







**CONSTRUCTION:** Non-toxic food grade PVC helix

(white) and PVC tube.

Reinforcement is one synthetic

braid.

**TEMPERATURE:** -50°F (-46°C) to +150°F (+66°C)

**BRANDING:** None

**APPLICATION:** Food handling and heavy duty suction

and discharge applications. Also for processing wine, beer, food paste,

dairy and syrup.

#### **FEATURES:**

- Meets FDA, USDA and 3A sanitary standards
- Clear, visual flow
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Vacuum rating up to 29" of HG
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.
- -50°F cold weather resistant and still flexible

**SAFETY FACTOR:** 3:1

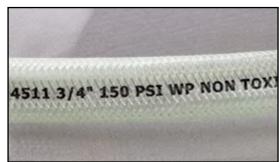
Part Number	I.	I.D.		.D.	Reinf. Braids		W.P. 8° F	Vacuum @ 68°F	Wei	ight		mum Radius	Std. Length.
Number	inch	mm	inch	mm	braids	PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
3012-0150-100	1-1/2	38.10	2.03	51.56	1	110	7.58	29.0	0.47	0.70	2.50	63.50	100
3012-0200-100	2	50.80	2.60	66.04	1	100	6.89	29.0	0.69	1.02	4.00	101.60	100
3012-0300-100	3	76.20	3.70	93.98	1	100	6.89	28.0	1.13	1.68	6.00	152.40	100
3012-0400-100	4	101.60	4.78	121.41	1	80	5.51	28.0	1.74	2.58	7.00	177.80	100
3012-0500-100	5	127.00	6.04	153.42	1	70	4.83	28.0	2.99	4.44	9.00	228.60	100



### 4511

### **FDA BRAIDED PVC HOSE**







**CONSTRUCTION:** Tube and cover are crystal clear,

non-toxic FDA Grade. Reinforcement one braid of synthetic material.

**TEMPERATURE:** -14°F (-26°C) to +140°F (+60°C)

**BRANDING:** Jason logo ID (INCH) WP (PSI) FDA NONTOXIC, Country of Origin.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** Food and beverage dispensing, potable

water, air, breathing lines, packaging and equipment, lube lines and other visual

flow applications.

#### **FEATURES:**

- One piece coils
- FDA Grade tube and cover
- Resists chemical, ozone and weathering
- Capable of handling a wide variety of food products

Part Number	I.D.		0	.D.	Reinf. Braids	Max. @ 6	W.P. 8° F	Vacuum @ 68°F	We	ight	Mini Bend I	mum Radius	Std. Length.
Number	inch	mm	inch	mm	braids	PSI	BAR	₩ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
4511-0251	1/4	6.35	0.45	11.43	1	250	17.24	n/a	0.04	0.06	n/a	n/a	300
4511-0311	5/16	7.94	0.47	11.94	1	250	17.24	n/a	0.05	0.07	n/a	n/a	300
4511-0381	3/8	9.53	0.55	13.97	1	200	13.79	n/a	0.07	0.10	n/a	n/a	300
4511-0501	1/2	12.70	0.69	17.53	1	150	10.35	n/a	0.10	0.15	n/a	n/a	300
4511-0631	5/8	15.88	0.82	20.83	1	150	10.35	n/a	0.12	0.18	n/a	n/a	300
4511-0751	3/4	19.05	0.99	25.15	1	150	10.35	n/a	0.18	0.27	n/a	n/a	300
4511-1001	1	25.40	1.28	32.51	1	125	8.62	n/a	0.27	0.40	n/a	n/a	300
4511-1251	1-1/4	31.75	1.61	40.89	1	100	6.89	n/a	0.44	0.65	n/a	n/a	100
4511-1501	1-1/2	38.10	1.85	46.99	1	70	4.83	n/a	0.51	0.76	n/a	n/a	100
4511-2001	2	50.80	2.39	60.71	1	60	4.14	n/a	0.74	1.10	n/a	n/a	100

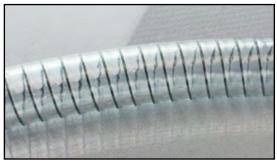
### **FOOD HOSE**



### 4600

### **FDA SPRING WIRE PVC HOSE**







**CONSTRUCTION:** Tube and cover are crystal clear,

FDA Grade. Reinforcement is electro-galvanized spring steel

wire.

**TEMPERATURE:** -14°F (-26°C) to +140°F (+60°C)

**BRANDING:** None

**APPLICATION:** Food and beverage dispensing, air,

water, coolant, car wash, deionized water systems and other clear flow applications.

### **FEATURES:**

- Clear food grade PVC allows for visual flow inspection
- Spring steel wire prevents kinking and collapsing
- All sizes are full vacuum

**SAFETY FACTOR: 3:1** 

Part	ı	.D.	C	).D.	Reinf.		W.P. 8° F	Vacuum	We	ight		mum Radius	Std. Length.
Number	inch	mm	inch	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4600-0380	3/8	9.53	0.63	16.00	Wire Spring	100	6.89	29.0	0.10	0.15	0.80	19.10	100
4600-0500	1/2	12.70	0.71	18.03	Wire Spring	100	6.89	29.0	0.13	0.19	1.00	25.40	100
4600-0630	5/8	15.88	0.90	22.86	Wire Spring	100	6.89	29.0	0.17	0.25	1.20	30.00	100
4600-0750	3/4	19.05	1.06	26.92	Wire Spring	100	6.89	29.0	0.24	0.36	1.30	34.00	100
4600-1000	1	25.40	1.31	33.27	Wire Spring	75	5.17	29.0	0.34	0.51	1.70	41.90	100
4600-1250	1-1/4	31.75	1.61	40.89	Wire Spring	75	5.17	29.0	0.50	0.74	2.00	50.80	50
4600-1500	1-1/2	38.10	1.85	46.99	Wire Spring	50	3.45	29.0	0.55	0.82	2.50	63.50	50
4600-2000	2	50.80	2.36	59.94	Wire Spring	50	3.45	29.0	0.84	1.25	3.20	82.00	50
4600-2500	2-1/2	63.50	2.97	75.44	Wire Spring	50	3.45	29.0	1.21	1.80	5.50	139.70	50
4600-3000	3	76.20	3.51	89.15	Wire Spring	50	3.45	29.0	1.48	2.20	6.50	165.10	50
4600-3500	3-1/2	88.90	4.09	103.89	Wire Spring	50	3.45	29.0	1.95	2.90	7.50	190.50	50
4600-4000	4	101.60	4.57	116.08	Wire Spring	50	3.45	29.0	2.18	3.24	8.50	215.90	50



# **FOOD HOSE**

### 4460

### FDA BULK FOOD SUCTION HOSE







**CONSTRUCTION:** Tube is white natural rubber (NR),

3/16" thick, FDA Grade. Cover is natural rubber, gray with flat corrugations. Two-ply reinforcement with

a steel wire helix.

**TEMPERATURE:** -40°F (-40°C) to +150°F (+66°C)

**BRANDING:** Jason logo 4460 FDA ID 3/16" Tube BULK

FOOD SUCTION WP (PSI) (BAR). Orange mylar longitudinal stripe.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** For suction, pneumatic or gravity transfer of flour, sugar, syrup or edible grains.

### **FEATURES:**

- Corrugations make the hose extremely flexible
- FDA Grade tube, natural rubber
- Natural rubber cover is weather and abrasion resistant
- All sizes are full vacuum

Part	1.0	D.	0	.D.	Reinf. Plies		x W.P. 68°F	Vacuum @ 68°F	We	eight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	@ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4460-0100-100	1	25.40	1.49	37.85	2	150	10.35	29.0	0.69	1.03	4.50	114.30	100
4460-0150-100	1-1/2	38.10	2.20	56.00	2	150	10.35	29.0	0.98	1.46	5.00	127.00	100
4460-0200-100	2	50.80	2.72	69.00	2	150	10.35	29.0	1.37	2.04	6.00	152.40	100
4460-0200-200	2	50.80	2.72	69.00	2	150	10.35	29.0	1.37	2.04	6.00	152.40	200
4460-0250-100	2-1/2	63.50	3.23	82.00	2	150	10.35	29.0	1.67	2.49	8.00	203.20	100
4460-0300-100	3	76.20	3.82	97.00	2	150	10.35	29.0	2.14	3.18	10.00	254.00	100
4460-0350-100	3-1/2	88.90	4.41	112.00	2	150	10.35	29.0	2.60	3.87	12.00	304.80	100
4460-0400-100	4	101.60	4.88	124.00	2	150	10.35	29.0	3.14	4.67	20.00	508.00	100
4460-0450-060	4-1/2	114.30	5.39	137.00	2	150	10.35	29.0	3.94	5.86	22.00	558.00	60
4460-0500-100	5	127.00	5.94	151.00	2	150	10.35	29.0	4.67	6.95	24.00	609.60	100
4460-0600-020	6	152.40	6.89	175.00	2	150	10.35	29.0	5.98	8.90	26.00	660.40	20
4460-0600-100	6	152.40	6.89	175.00	2	150	10.35	29.0	5.98	8.90	26.00	660.40	100
4460-0662-020	6-5/8	168.28	7.52	191.01	2	150	10.35	29.0	7.31	10.88	29.00	736.60	20
4460-0688-020	6-7/8	174.63	7.80	198.13	2	150	10.35	29.0	7.81	11.58	30.00	762.60	20
4460-0800-020	8	203.20	8.94	227.00	2	150	10.35	29.0	9.36	13.93	32.00	812.80	20
4460-0862-020	8-5/8	219.08	9.33	236.98	2	125	8.62	29.0	9.64	14.35	36.00	914.40	20
4460-1000-020	10	254.00	10.83	275.08	2	125	8.62	29.0	11.57	17.22	44.00	1117.60	20
4460-1200-020	12	304.80	12.83	325.88	2	100	6.89	29.0	15.27	22.72	60.00	1524.00	20
4460-1400-020	14	355.60	14.76	374.90	2	100	6.89	29.0	18.41	27.40	72.00	1828.80	20

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

All sizes may not be stocked in all locations. Check with customer service for availability. We disclaim any liability for use of our products in applications other than which they are designed.

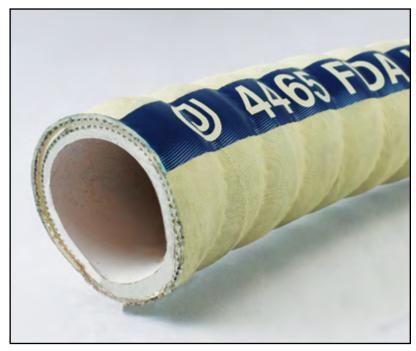


# **FOOD HOSE**



### 4465

### **FDA LIQUID FOOD SUCTION HOSE**







**CONSTRUCTION:** Tube is white nitrile rubber FDA

Grade. Cover is nitrile, corrugated and white. Two-ply reinforcement with a steel wire helix.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4465 FDA LIQUID FOOD

SUCTION WP 150 PSI 10.35 BAR. Blue

mylar longitudinal stripe.

**APPLICATION:** For suction and discharge of liquid food products, including oily edibles and beer.

### **FEATURES:**

- Corrugations make the hose extremely flexible
- FDA Grade tube, nitrile rubber
- Nitrile rubber cover is weather and abrasion resistant
- All sizes are full vacuum
- Capable of handling a wide variety of food products

### **SAFETY FACTOR: 3:1**

Part Number	I.D		o	.D.	Reinf. Plies	-	W.P. 8° F	Vacuum @ 68°F	We	ight		mum Radius	Std. Length
Number	inch	mm	inch	mm	Piles	PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
4465-0075-100	3/4	19.05	1.10	28.00	2	150	10.35	29.0	0.34	0.51	2.40	60.00	100
4465-0100-100	1	25.40	1.38	35.00	2	150	10.35	29.0	0.45	0.67	3.10	80.00	100
4465-0150-100	1-1/2	38.10	2.05	52.07	2	150	10.35	29.0	1.06	1.58	4.00	101.60	100
4465-0200-100	2	50.80	2.56	65.02	2	150	10.35	29.0	1.35	2.01	5.00	127.00	100
4465-0300-100	3	76.20	3.56	90.42	2	150	10.35	29.0	2.08	3.10	6.00	152.40	100
4465-0400-100	4	101.60	4.69	119.13	2	150	10.35	29.0	3.21	4.79	8.00	203.20	100



# FOR THE TRANSFER OF BULK MATERIAL, ABRASIVES, CONCRETE & CEMENT

SERIES		PAGE
3020	HD Polyurethane Lined, PVC Material Handling Hose	41
3021	Polyurethane Material Handling and Duct Hose	42
3022	Medium Duty Polyurethane Lined Material Handling Hose	43
3030	PVC Mulch Resurfacing Hose	44
3035	Abrasion Resistant SBR Material Handling Hose	45
4310	Gunite Hose	51
4312	2-Ply Sandblast Hose	53
4313	Lightweight Sandblast Hose	54
4314	4-Ply Sandblast Hose	55
4322	1/8" Tube Sand & Dry Cement, Powder Discharge Hose	48
4323	3/16" Tube Sand & Dry Cement, Powder Discharge Hose	48
4324	1/4" Tube Sand & Dry Cement, Powder Discharge Hose	48
4370	Concrete Placement Hose - 800 PSI	49
4375	Concrete Placement Hose - 1300 PSI	50
4425	Hot Air Blower Hose	47
4428	Plaster and Grout Hose	52
4470	Bulk Material Suction Hose	46

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.





### 3020 HD POLYURETHANE LINED, PVC MATERIAL HANDLING HOSE







**CONSTRUCTION:** Polyurethane abrasion resistant

liner with a PVC cover and a sturdy

clockwise PVC helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** For vacuum and transfer of abrasive

crushed rock, gravel, sand or dry fertilizers, fly ash and also used for

shot blast recovery.

### **FEATURES:**

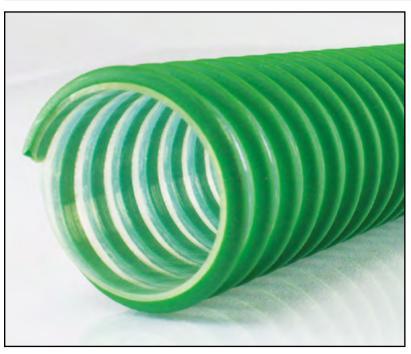
- Abrasion resistant PU liner
- Static dissipating cover compound
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Glo-Glide" external clockwise PVC helix

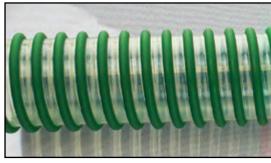
**SAFETY FACTOR:** 3:1

Part Number	l.	D.	O	.D.	Reinf.	Max. @ 6		Vacuum @ 68°F	Wei	ght		mum Radius	Std. Length
Number	inch	mm	inch	mm		PSI	BAR	₩ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
3020-0150-100	1-1/2	38.10	1.85	46.99	PVC Helix	50	3.45	29.0	0.42	0.63	2.00	50.80	100
3020-0200-100	2	50.80	2.40	60.96	PVC Helix	40	2.76	29.0	0.59	0.88	3.00	76.20	100
3020-0250-100	2-1/2	63.50	3.09	78.49	PVC Helix	40	2.76	29.0	0.82	1.22	3.00	76.20	100
3020-0300-100	3	76.20	3.64	92.46	PVC Helix	40	2.76	29.0	1.18	1.76	4.00	101.60	100
3020-0400-100	4	101.60	4.76	120.90	PVC Helix	35	2.41	29.0	1.94	2.89	6.00	152.40	100
3020-0600-020	6	152.40	6.80	172.72	PVC Helix	30	2.07	28.0	3.50	5.21	12.00	304.80	20
3020-0600-050	6	152.40	6.80	172.72	PVC Helix	30	2.07	28.0	3.50	5.21	12.00	304.80	50
3020-0600-100	6	152.40	6.80	172.72	PVC Helix	30	2.07	28.0	3.50	5.21	12.00	304.80	100
3020-0800-020	8	203.20	9.16	232.66	PVC Helix	30	2.07	28.0	5.90	8.78	18.00	457.20	20
3020-0800-050	8	203.20	9.16	232.66	PVC Helix	30	2.07	28.0	5.90	8.78	18.00	457.20	50



### 3021 POLYURETHANE MATERIAL HANDLING AND DUCT HOSE







**CONSTRUCTION:** Polyurethane abrasion resistant tube

with sturdy clockwise PVC helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Insulation blowing, fume removal,

ducting, ventilation and dust collection.

### **FEATURES:**

- Abrasion resistant PU
- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix

**SAFETY FACTOR:** 3:1

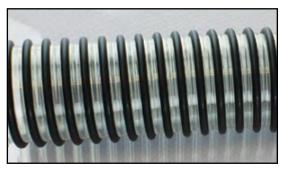
Part	I.	D.	C	).D.	Reinf.		W.P. 8° F	Vacuum @ 68°F	We	eight		mum Radius	Std. Length.
Number	inch	mm	inch	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
3021-0150-100	1-1/2	38.10	1.82	46.23	PVC Helix	20	1.38	15.0	0.23	0.34	0.70	17.80	100
3021-0200-100	2	50.80	2.40	60.96	PVC Helix	15	1.03	12.0	0.32	0.48	1.37	34.80	100
3021-0250-100	2-1/2	63.50	2.90	73.66	PVC Helix	10	0.69	10.0	0.39	0.58	1.37	34.80	100
3021-0300-100	3	76.20	3.43	87.12	PVC Helix	10	0.69	10.0	0.55	0.82	2.25	57.20	100
3021-0400-100	4	101.60	4.48	113.79	PVC Helix	8	0.55	8.0	0.77	1.15	3.00	76.20	100



### 3022

### MEDIUM DUTY POLYURETHANE LINED MATERIAL HANDLING HOSE







**CONSTRUCTION:** Medium duty abrasion resistant

polyurethane liner with static dissipating PVC cover and sturdy

clockwise PVC helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Dust collection, dry fertilizer, plastic

pellets or any dry medium abrasive

requirements.

#### **FEATURES:**

- Abrasion resistant PU tube
- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Static dissipating PVC cover compound

**SAFETY FACTOR: 3:1** 

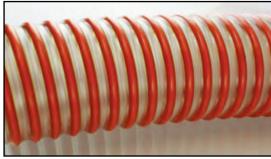
Part Number	1.1	D.	0	.D.	Reinf.		W.P. 8° F	Vacuum @ 68°F	We	ight		imum Radius	Std. Lgth.
Number	inch	mm	inch	mm		PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
3022-0150-100	1-1/2	38.10	1.91	48.51	PVC Helix	30	2.07	24.0	0.29	0.43	1.37	34.80	100
3022-0200-100	2	50.80	2.46	62.48	PVC Helix	25	1.72	22.0	0.40	0.60	2.50	63.50	100
3022-0250-100	2-1/2	63.50	2.90	73.66	PVC Helix	20	1.38	19.0	0.54	0.80	2.50	63.50	100
3022-0300-100	3	76.20	3.53	89.66	PVC Helix	20	1.38	18.0	0.68	1.01	4.00	101.60	100
3022-0400-100	4	101.60	4.57	116.08	PVC Helix	15	1.03	13.0	1.01	1.50	6.00	152.40	100



### 3030

### **PVC MULCH RESURFACING HOSE**







**CONSTRUCTION:** Abrasion resistant PVC tube with

sturdy clockwise PVC helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Standard duty material handling hose to

dispense mulch, bark, wood chips or for resurfacing and landscaping.

### **FEATURES:**

- Abrasion resistant PVC tube
- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix

**SAFETY FACTOR:** 3:1

Part	1.0	<b>D</b> .	o	.D.	Reinf.	Max. @ 68		Vacuum	We	ight		mum Radius	Std. Length.
Number	inch	mm	inch	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
3030-0400-100	4	101.60	4.55	115.57	PVC Helix	35	2.41	29.0	1.35	2.01	9.00	228.60	100
3030-0500-100	5	127.00	5.60	142.24	PVC Helix	30	2.07	24.0	1.75	2.60	10.00	254.00	100
3030-0600-100	6	152.40	6.79	172.47	PVC Helix	25	1.72	24.0	2.42	3.60	11.00	279.40	100



### 3035 ABRASION RESISTANT SBR MATERIAL HANDLING HOSE







**CONSTRUCTION:** Abrasion resistant SBR tube and cover

that are both static dissipating with a sturdy clockwise helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Abrasive suction for crushed rock, sand,

dry fertilizer, small gravel and powdered cement. Can also be used as a boom hose

for catch basin clean out.

### **FEATURES:**

- Heavy-duty abrasion resistance
- -40°F cold weather resistance
- Sub-zero flexibility
- No ground wire is needed as the tube and cover compound are static dissipating
- Lightweight

**SAFETY FACTOR: 3:1** 

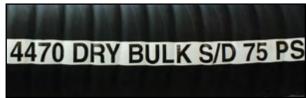
Part	1.0	).	0	.D.	Reinf.	-	( W.P. 68°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3035-0150-100	1-1/2	38.10	1.82	46.23	PVC Helix	45	3.10	29.0	0.37	0.55	2.00	50.80	100
3035-0200-100	2	50.80	2.35	59.69	PVC Helix	40	2.76	29.0	0.50	0.74	2.50	63.50	100
3035-0250-100	2-1/2	63.50	2.95	74.93	PVC Helix	35	2.41	29.0	0.88	1.31	2.50	63.50	100
3035-0300-100	3	76.20	3.51	89.15	PVC Helix	35	2.41	29.0	1.10	1.64	3.00	76.20	100
3035-0400-100	4	101.60	4.63	117.60	PVC Helix	30	2.07	29.0	1.76	2.62	4.50	114.30	100
3035-0500-100	5	127.00	5.75	146.05	PVC Helix	30	2.07	28.0	2.47	3.68	5.00	127.00	100
3035-0600-050	6	152.40	6.73	170.94	PVC Helix	30	2.07	28.0	3.09	4.60	9.00	228.60	50
3035-0600-100	6	152.40	6.73	170.94	PVC Helix	30	2.07	28.0	3.09	4.60	9.00	228.60	100
3035-0800-050	8	203.20	9.04	230.00	PVC Helix	30	2.07	27.0	5.65	8.40	15.00	381.00	50



### 4470

### **BULK MATERIAL SUCTION HOSE - SΩ**







CONSTRUCTION: Tube is 1/4" pure gum rubber, tan

color. Cover is EPDM, fabric impression, corrugated and black. Reinforcement is a two-ply synthetic fabric with a wire helix and a

static wire.

**TEMPERATURE:** -40°F (-40°C) to +180°F (+82°C) **BRANDING:** Jason logo 4470 DRY BULK SUCTION

WP (PSI) (BAR). White mylar longitudinal stripe

**SAFETY FACTOR:** 3:1

**APPLICATION:** For suction, discharge or gravity flow of abrasives from manufacturing, sandblast recovery, mineral processing power plants and spill recovery.

### **FEATURES:**

- 1/4" gum tube is highly abrasion resistant
- Corrugated to make the hose flexible, even in tight bends
- Weather and ozone resistant
- All sizes are full vacuum
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

Part	1.1	D.	0.	D.	Reinf.		W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4470-0125-100	1-1/4	31.75	1.81	46.00	2	75	5.17	29.0	0.77	1.14	4.00	101.60	100
4470-0150-100	1-1/2	38.10	2.10	53.34	2	75	5.17	29.0	1.11	1.65	4.00	101.60	100
4470-0200-100	2	50.80	2.60	66.04	2	75	5.17	29.0	1.30	1.93	12.00	304.80	100
4470-0250-100	2-1/2	63.50	3.11	78.99	2	75	5.17	29.0	1.65	2.46	17.00	431.80	100
4470-0300-100	3	76.20	3.66	92.96	2	75	5.17	29.0	2.25	3.35	18.00	457.20	100
4470-0400-050	4	101.60	4.69	119.13	2	75	5.17	29.0	2.93	4.36	24.00	609.60	50
4470-0400-100	4	101.60	4.69	119.13	2	75	5.17	29.0	2.93	4.36	24.00	609.60	100
4470-0500-100	5	127.00	5.70	144.78	2	75	5.17	29.0	3.83	5.70	30.00	762.00	100
4470-0600-050	6	152.40	6.73	170.94	2	75	5.17	29.0	5.00	7.44	32.00	812.80	50
4470-0600-100	6	152.40	6.73	170.94	2	75	5.17	29.0	5.00	7.44	32.00	812.80	100
4470-0800-020	8	203.20	9.13	231.90	2	60	4.14	29.0	10.05	14.96	40.00	1016.00	20
4470-0800-050	8	203.20	9.13	231.90	2	60	4.14	29.0	10.05	14.96	40.00	1016.00	50

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

SΩ = Safety Ohm





### 4425

### **HOT AIR BLOWER HOSE**







**CONSTRUCTION:** Tube and cover are EPDM. Cover is

brown, fabric impression.

Reinforcement is synthetic fabric

with a wire helix.

**TEMPERATURE:** Intermittent to +350°F (+177°C)

BRANDING: Jason logo 4425 HOT AIR 325°F WP

50 PSI 3.4 BAR.

White mylar longitudinal stripe.

**APPLICATION:** Used to convey hot air from blower to tank on bulk transport trucks.

### **FEATURES:**

- EPDM tube and cover for high heat resistance
- Temperature range up to 350°F (intermittent)
- Excellent flexibility
- All sizes full vacuum

**SAFETY FACTOR:** 3:1

Part	1	.D.	Ο.	D.	Reinf.	Max @ 6		Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4425-0300-100	3	76.20	3.56	90.42	2	50	3.45	29.0	1.93	2.87	5.50	139.70	100
4425-0400-100	4	101.60	4.60	118.84	2	50	3.45	29.0	2.65	3.94	7.00	177.80	100



4322 1/8" TUBE SAND & DRY CEMENT, POWDER DISCHARGE HOSE 4323 3/16" TUBE SAND & DRY CEMENT, POWDER DISCHARGE HOSE 4324 1/4" TUBE SAND & DRY CEMENT, POWDER DISCHARGE HOSE







CONSTRUCTION: Tube is NR/SBR blend, black and

static-dissipating. Reinforcement is

a two-ply synthetic fabric.

**TEMPERATURE:** -40°F (-40°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4322, 4323 or 4324 DRY

BULK DISCHARGE ID Tube WP 75 PSI

5.17 BAR.

White mylar longitudinal stripe.

**APPLICATION:** For pneumatic discharge of dry powders,

dry cement or other dry materials. Also used for sand/water mix applications on

fracking sites.

#### **FEATURES:**

- Special static dissipating tube compound
- Weather and ozone resistant
- High abrasion resistant tube resists cutting/gouging
- Can be rolled for transport and storage

**SAFETY FACTOR: 3:1** 

Part Number		l.D.	C	D.D.	Reinf.	_	x W.P. 68°F	Vacuum @ 68°F	Wei	ght		imum Radius	Std. Length
Number	in.	mm	in.	mm	Files	PSI	BAR	₩ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
					1/8" TUB	E THIC	KNESS						
4322-0400-100	4	101.60	4.48	113.79	2	75	5.17	n/a	1.60	2.38	40.00	1016.00	100
4322-0500-100	5	127.00	5.46	138.68	2	75	5.17	n/a	1.88	2.80	50.00	1270.00	100
				3	/16" TUE	E THI	CKNESS						
4323-0400-100	4	101.60	4.68	118.87	2	75	5.17	n/a	2.42	3.60	40.00	1016.00	100
4323-0500-100	5	127.00	5.68	144.27	2	75	5.17	n/a	2.92	4.35	50.00	1270.00	100
					1/4" TUB	E THIC	KNESS						
4324-0400-100	4	101.60	4.84	122.94	2	75	5.17	n/a	3.23	4.81	40.00	1016.00	100
4324-0500-100	5	127.00	5.84	148.34	2	75	5.17	n/a	3.80	5.65	50.00	1270.00	100



### 4370

### **CONCRETE PLACEMENT HOSE - 800 PSI**







CONSTRUCTION: Tube is a blend of synthetic and natural

elastomers, black, smooth and anti-static. Cover is also a blend of synthetic and natural elastomers, black, smooth with a cloth impression. Reinforcement is several spirals of high tensile textile cord.

**TEMPERATURE:** -22°F (-30°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4370 800 PSI WP TEXTILE

CONCRETE PLACEMENT. Clear mylar longitudinal stripe. **APPLICATION:** High pressure concrete placement applications.

### **FEATURES:**

- Anti-static tube and cover
- Cover is abrasion, weather and ozone resistant
- Designed for high kink resistance and perfect flow

**SAFETY FACTOR: 3:1** 

Part		l.D.	O	).D.	Reinf.	Max \ @ 68		Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Spirals	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4370-0200-050	2	50.80	2.68	68.00	6	800	55.2	n/a	1.41	2.09	13.75	350.00	50
4370-0200-100	2	50.80	2.68	68.00	6	800	55.2	n/a	1.41	2.09	13.75	350.00	100
4370-0300-050	3	76.20	3.78	96.00	6	800	55.2	n/a	2.40	3.57	16.10	408.00	50
4370-0300-100	3	76.20	3.78	96.00	6	800	55.2	n/a	2.40	3.57	16.10	408.00	100
4370-0400-050	4	101.60	4.96	126.00	8	800	55.2	n/a	4.23	6.29	26.00	660.00	50
4370-0400-100	4	101.60	4.96	126.0	8	800	55.2	n/a	4.23	6.29	26.00	660.00	100



4375

### **CONCRETE PLACEMENT HOSE - 1300 PSI**







**CONSTRUCTION:** Tube is a blend of synthetic and

natural elastomers, black, smooth and anti-static. Cover is also a blend of synthetic and natural elastomers, black, smooth with a cloth impression and anti-static. Reinforcement is a 2 or 4-spiral high tensile steel wire.

**TEMPERATURE:** -22°F (-30°C) to +185°F (+85°C)

BRANDING: Jason logo 4375 1300 PSI WP WIRE

CONCRETE PLACEMENT.

Clear stripe with reversed lettering.

**APPLICATION:** For very high pressure concrete placement applications.

### **FEATURES:**

- Tube and cover compounds are anti-static
- Tube is abrasion resistant
- Cover is abrasion, ozone and weather resistant
- Designed for high kink resistance and perfect flow

**SAFETY FACTOR: 3:1** 

Part	I.	D.	0.	D.	Reinf.	Max @ 6		Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Spirals	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4375-0200-050	2	50.80	2.87	73.00	2	1300	89.6	n/a	1.95	2.91	16.10	410.00	50
4375-0200-100	2	50.80	2.87	73.00	2	1300	89.6	n/a	1.95	2.91	16.10	410.00	100
4375-0300-050	3	76.20	4.02	102.00	4	1300	89.6	n/a	3.63	5.40	24.00	610.00	50
4375-0300-100	3	76.20	4.02	102.00	4	1300	89.6	n/a	3.63	5.40	24.00	610.00	100
4375-0400-050	4	101.60	5.12	130.00	4	1300	89.6	n/a	5.31	7.90	32.30	820.00	50
4375-0400-100	4	101.60	5.12	130.00	4	1300	89.6	n/a	5.31	7.90	32.30	820.00	100



4310 GUNITE HOSE







**CONSTRUCTION:** Tube is 1/4" thick, pure gum rubber,

tan color. Cover is EPDM, pin-pricked and tan in color. Reinforcement is a two-ply synthetic fabric with a static wire.

**TEMPERATURE:** -40°F (-40°C) to +185°F (+85°C)

BRANDING: Jason logo 4310 GUNITE 150 PSI 10.35 BAR.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** For conveyance of sand and cement to the mixing gun.

### **FEATURES:**

- 1/4" gum tube has superior abrasion resistance
- Weather and abrasion resistant cover
- Cover compound is non-marking, allows for work around buildings and pool tiles

Part	I.	D.	o	.D.	Reinf.	1	W.P. 88°F	Vacuum	Wei	ght		mum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4310-0150-050	1-1/2	38.10	2.38	60.33	2	150	10.35	n/a	1.10	1.64	15.00	380.00	50
4310-0163-050	1-5/8	41.28	2.52	64.00	2	150	10.35	n/a	1.40	2.09	16.50	420.00	50
4310-0200-050	2	50.80	2.88	72.90	2	150	10.35	n/a	1.65	2.46	20.00	508.00	50
4310-0250-050	2-1/2	63.50	3.88	98.30	2	150	10.35	n/a	2.30	3.42	25.00	635.00	50



### 4428

### **PLASTER AND GROUT HOSE**







CONSTRUCTION: Tube is NR/SBR blend. Cover is a

NR/SBR blend, pin-pricked. Reinforcement is four plies of synthetic textile with a static wire.

**TEMPERATURE:** -40°F (-40°C) to +158°F (+70°C)

BRANDING: Jason logo 4428 PLASTER GROUT WP

800 PSI 55.2 BAR.

White mylar longitudinal stripe.

**APPLICATION:** Used for spraying plaster, grout, sand

and gypsym.

### **FEATURES:**

- Cover ozone and weather resistant
- Very good abrasion resistance
- Handles a variety of applications

**SAFETY FACTOR: 3:1** 

Part	1.1	<b>)</b> .	О.	D.	Reinf.		W.P. 8°F	Vacuum	We	ight	1	mum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4428-0150-050	1-1/2	38.10	2.20	56.00	4	800	55.20	n/a	1.07	1.59	n/a	n/a	100
4428-0200-050	2	50.80	2.76	70.00	4	800	55.20	n/a	1.43	2.13	n/a	n/a	100
4428-0250-050	2-1/2	63.50	3.31	84.00	4	800	55.20	n/a	1.73	2.58	n/a	n/a	100



### 4312

### 2-PLY SANDBLAST HOSE







CONSTRUCTION: Tube is a SBR/NR blend which is a

1/4" thick, black and static dissipating. Cover is an SBR/NR blend, pin-pricked. Reinforcement is a two-ply synthetic fabric.

TEMPERATURE: -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** None

**SAFETY FACTOR: 3:1** 

**APPLICATION:** For conveyance of highly abrasive materials in sandblasting/cleaning and general maintenance in construction, shipyards, power plants and equipment

rental.

### **FEATURES:**

- Tube compounds are static-dissipating
- Highly abrasion resistant tube that will handle any blast grit
- Cover is abrasion and weather resistant

Part	1.1	D.	0	.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4312-0050-050	1/2	12.70	1.00	25.40	2	150	10.35	n/a	0.31	0.46	5.00	127.00	50
4312-0051-050	1/2	12.70	1.06	26.99	2	150	10.35	n/a	0.33	0.49	5.00	127.00	50
4312-0051-100	1/2	12.70	1.06	26.99	2	150	10.35	n/a	0.33	0.49	5.00	127.00	100
4312-0052-050	1/2	12.70	1.13	28.58	2	150	10.35	n/a	0.38	0.57	5.00	127.00	50
4312-0075-050	3/4	19.05	1.50	38.10	2	150	10.35	n/a	0.60	0.89	7.50	190.00	50



### 4313

### LIGHTWEIGHT SANDBLAST HOSE







CONSTRUCTION: Tube is SBR/NR blend which is

static dissipating. Cover is an

SBR/NR blend, black. Reinforcement is a two-ply

synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4313 LW SANDBLAST 1-7/8" O.D.

WP 150 PSI 10.35 BAR.

White longitudinal mylar stripe.

**APPLICATION:** For conveyance of highly abrasive

materials in sandblasting/cleaning

operations.

### **FEATURES:**

- Tube compounds are static-dissipating
- Highly abrasion resistant tube that will handle any blast grit
- Cover is abrasion and weather resistant
- Lighter weight than standard sandblast hose
- Maintains the high quality features
- Utilizes couplings or nozzle holders made to fit 1-7/8" O.D. hose

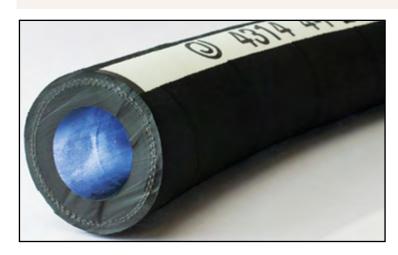
**SAFETY FACTOR: 3:1** 

Part	1.1	D.	О.	D.	Reinf.	-	W.P. 8°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4313-0125-050	1-1/4	31.75	1.88	47.63	2	150	10.35	n/a	0.83	1.24	10.00	254.00	50
4313-0125-100	1-1/4	31.75	1.88	47.63	2	150	10.35	n/a	0.83	1.24	10.00	254.00	100
4313-0125-200	1-1/4	31.75	1.88	47.63	2	150	10.35	n/a	0.83	1.24	10.00	254.00	200



### 4314

### **4-PLY SANDBLAST HOSE**







**CONSTRUCTION:** Tube is a SBR/NR blend, 1/4" thick,

black and static dissipating. Cover is an SBR/NR blend, black. Reinforcement is a four-ply

synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4314 4-PLY SANDBLAST WP

150 PSI 10.35 BAR.

White mylar longitudinal stripe.

**APPLICATION:** For sandblasting/cleaning operations in construction, shipyards, steel mills and

### **FEATURES:**

• Tube compounds are static-dissipating

refineries.

- Highly abrasion resistant tube that will handle any blast grit
- Cover is abrasion and weather resistant
- Highly abrasion resistant tube handles manufactured coal slag, aluminum oxide or grit
- Each O.D. is held to strict tolerances (ARPM) for ideal coupling compatibility

**SAFETY FACTOR: 3:1** 

Part	1.1	<b>)</b> .	0.	.D.	Reinf.		x W.P. 68°F	Vacuum	Wei	ght		mum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4314-0075-050	3/4	19.05	1.50	38.10	4	150	10.35	n/a	0.66	0.98	7.50	190.0	50
4314-0075-100	3/4	19.05	1.50	38.10	4	150	10.35	n/a	0.66	0.98	7.50	190.0	100
4314-0075-200	3/4	19.05	1.50	38.10	4	150	10.35	n/a	0.66	0.98	7.50	190.0	200
4314-0100-050	1	25.40	1.88	47.63	4	150	10.35	n/a	0.80	1.19	10.00	254.0	50
4314-0100-100	1	25.40	1.88	47.63	4	150	10.35	n/a	0.80	1.19	10.00	254.0	100
4314-0100-200	1	25.40	1.88	47.63	4	150	10.35	n/a	0.80	1.19	10.00	254.0	200
4314-0125-050	1-1/4	31.75	2.16	53.18	4	150	10.35	n/a	1.04	1.55	12.60	320.0	50
4314-0125-100	1-1/4	31.75	2.16	53.18	4	150	10.35	n/a	1.04	1.55	12.60	320.0	100
4314-0125-200	1-1/4	31.75	2.16	53.18	4	150	10.35	n/a	1.04	1.55	12.60	320.0	200
4314-0150-050	1-1/2	38.10	2.38	60.33	4	150	10.35	n/a	1.25	1.86	15.00	380.0	50
4314-0150-100	1-1/2	38.10	2.38	60.33	4	150	10.35	n/a	1.25	1.86	15.00	380.0	100
4314-0150-200	1-1/2	38.10	2.38	60.33	4	150	10.35	n/a	1.25	1.86	15.00	380.0	200
4314-0200-050	2	50.80	2.88	73.03	4	150	10.35	n/a	1.45	2.16	20.00	508.0	50
4314-0200-100	2	50.80	2.88	73.03	4	150	10.35	n/a	1.45	2.16	20.00	508.0	100



# **MINE SPRAY HOSE**

# FOR DUST CONTROL IN UNDERGROUND MINING

SERIES 4182

**MSHA Mine Spray Hose** 

PAGE

57

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.



# **MINE SPRAY HOSE**



### 4182

### **MSHA MINE SPRAY HOSE**







CONSTRUCTION: SBR tube, smooth and black. Cover

is CR, fabric impression, pin-pricked, yellow. Reinforcement is two plies

of steel wire.

**TEMPERATURE:** 0°F (-18°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4182 MINE SPRAY MSHA

IC-84-42 1000 PSI WP 69 BAR. Black longitudinal stripe.

**APPLICATION:** For dust control in underground water spray operations.

### **FEATURES:**

- Meets MSHA rating IC-84-42
- Flame retardant
- Visible yellow color
- Cover is weather and abrasion resistant

#### **SAFETY FACTOR: 3:1**

Part	1.1	D.	C	).D.	Reinf.		W.P. 8°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4182-0050-050	1/2	12.70	0.97	24.60	2	1000	68.95	n/a	0.40	0.60	5.90	150.00	50
4182-0050-100	1/2	12.70	0.97	24.60	2	1000	68.95	n/a	0.40	0.60	5.90	150.00	100
4182-0075-050	3/4	19.05	1.22	30.99	2	1000	68.95	n/a	0.60	0.89	8.30	210.00	50
4182-0075-100	3/4	19.05	1.22	30.99	2	1000	68.95	n/a	0.60	0.89	8.30	210.00	100
4182-0100-050	1	25.40	1.49	37.85	2	1000	68.95	n/a	0.80	1.19	11.00	280.00	50
4182-0100-100	1	25.40	1.49	37.85	2	1000	68.95	n/a	0.80	1.19	11.00	280.00	100
4182-0125-050	1-1/4	31.75	1.81	45.97	2	1000	68.95	n/a	1.05	1.56	14.00	355.00	50
4182-0125-100	1-1/4	31.75	1.81	45.97	2	1000	68.95	n/a	1.05	1.56	14.00	355.00	100
4182-0150-050	1-1/2	38.10	2.04	51.82	2	1000	68.95	n/a	1.24	1.85	16.50	420.00	50
4182-0150-100	1-1/2	38.10	2.04	51.82	2	1000	68.95	n/a	1.24	1.85	16.50	420.00	100
4182-0200-050	2	50.80	2.60	66.04	2	1000	68.95	n/a	1.80	2.68	22.00	560.00	50
4182-0200-100	2	50.80	2.60	66.04	2	1000	68.95	n/a	1.80	2.68	22.00	560.00	100



# FOR IN-PLANT OR TANK TRUCK USE TO TRANSFER PETROLEUM PRODUCTS

SERIES		PAGE
3040	Petroleum Drop Hose for Suction & Delivery of Gasoline and Alternative Fuels - $\mathbf{S}\Omega$	60
3045	Petroleum Drop Hose for Suction & Delivery of Gasoline and Alternative Fuels - $\mathbf{S}\Omega$	61
3050	Polyurethane Gasoline & Alternative Fuel Vapor Recovery Hose - $S\Omega$	62
3053	HD Polyurethane Gasoline & Alternative Fuel Vapor Recovery Hose - $\mathbf{S}\Omega$	63
3058	NBR/PVC Drop Hose for Suction & Gasoline Delivery - $S\Omega$	59
3085	Oilfield Clean-Up and Spill Recovery Hose	64
3087	Safety Oilfield Clean-Up and Recovery Hose	65
4328	Nitrile Fuel Discharge Hose - 300 PSI	71
4348	Frack Oilfield Fuel Discharge Hose - 400 PSI	72
4368 <b>NEW!</b>	HD Oilfield Liquid Mud Discharge Hose - 600 PSI	73
4409 <b>NEW!</b>	Drilling Mud, Oilfield Suction & Disch. Hose - 150PSI	77
4410	Blue Low Temp Petroleum Suction Hose - Corrugated	76
4411 <b>NEW!</b>	Oilfield Suction & Discharge Hose - 150 PSI	78
4413 <b>NEW!</b>	Oilfield Vac hose - 150 PSI	79
4414	Nitrile Petroleum Suction Hose - 300 PSI	69
4415	Oil Return Hose SAE 100R4	80
4418	Crude Oil Waste Pit Suction Hose - Smooth Cover	81
4419	Crude Oil Waste Pit Suction Hose - Corrugated Cover	82
4420	Nitrile Petroleum Suction Hose - 150 PSI	66
4421	Tank Truck Hose - Red Corrugated	67
4423	Bio-Diesel/Ethanol Suction and Discharge Hose	68
4424	Nitrile Petroleum Suction Hose - 400 PSI	70
4426 <b>NEW!</b>	Dreamflex Petroleum Transfer & Suction Hose	75
4429	Hot Tar & Asphalt Suction Hose - 150 PSI	83
4436 <b>NEW!</b>	Oilfield Petro Waste Suction Hose	74

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

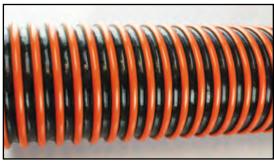
We disclaim any liability for use of our products in applications other than which they are designed.



### 3058

# NBR/PVC DROP HOSE FOR SUCTION AND DELIVERY OF GASOLINE - $S\Omega$







CONSTRUCTION: NBR/PVC tube, smooth bore with

embedded  $S\Omega$  ground wire in the hose wall with a sturdy clockwise PVC helix, one braid of high tensile polyester yarn reinforcement.

**TEMPERATURE:** -10°F (-23°C) to +140°F (+60°C)

**APPLICATION:** Used to deliver gasoline, diesel fuel, kerosene and fuels with aromatic

content to 40%.

### **FEATURES:**

- Higher transfer pressures
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

**SAFETY FACTOR:** 3:1

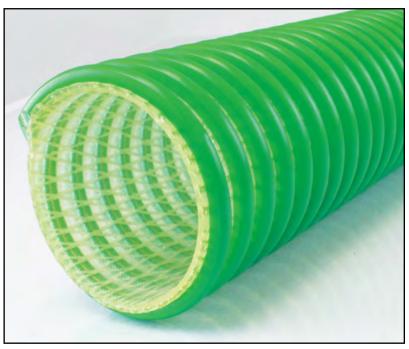
Part	1.1	D.	0	.D.	Reinf. Braids	Max @ 6		Vacuum	Wei	ght		mum Radius	Std. Length
Number	in.	mm	in.	mm	braius	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3058-0200-100	2	50.80	2.68	68.07	1	70	4.83	29.9	1.13	1.68	5.00	127.00	100
3058-0300-100	3	76.20	3.68	93.47	1	65	4.48	29.9	1.37	2.04	6.00	152.40	100
3058-0400-100	4	101.60	4.80	121.92	1	65	4.48	29.9	2.16	3.21	8.00	203.20	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

Note: Use JASON ORANGE banding sleeves only when securing coupling for 3" and 4" ID's. Discharge pressures and vacuum are temperature dependent.



# 3040 POLYURETHANE DROP HOSE FOR SUCTION AND DELIVERY OF GASOLINE AND ALTERNATIVE FUELS - $S\Omega$







**CONSTRUCTION:** Polyurethane tube, smooth bore

with embedded  $S\Omega$  ground wire in the hose wall with a sturdy clockwise PVC helix, one braid of high tensile polyester yarn reinforcement.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C) **APPLICATION:** Used in the delivery of biofuels, gasoline, kerosene and fuel oil.

**SAFETY FACTOR: 3:1** 

### **FEATURES:**

- Higher transfer pressures
- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.
- Vacuum up to 29" of Hg

Part	ı.	D.	0	.D.	Reinf.	_	x W.P. 68°F	Vacuum	Wei	ght		mum Radius	Std. Length
Number	in.	mm	in.	mm	Braids	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3040-0200-100	2	50.80	2.46	62.48	1	75	5.17	29.0	0.63	0.94	4.00	101.60	100
3040-0300-100	3	76.20	3.78	96.01	1	65	4.48	29.0	1.20	1.79	6.00	152.40	100
3040-0400-100	4	101.60	4.83	122.68	1	65	4.48	29.0	1.71	2.54	8.00	203.20	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

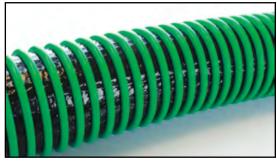
Note: Use JASON GREEN banding sleeves only when securing coupling for 3" and 4" ID's. Discharge pressures and vacuum are temperature dependent.

 $S\Omega$  = Safety Ohm



# 3045 POLYURETHANE DROP HOSE FOR SUCTION AND DELIVERY OF GASOLINE AND ALTERNATIVE FUELS - $S\Omega$







**CONSTRUCTION:** Polyurethane tube, smooth bore

with embedded  $S\Omega$  ground wire in the hose wall with a sturdy clockwise PVC helix, one braid of high tensile polyester yarn reinforcement.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C) **APPLICATION:** Used in the delivery of biofuels, gasoline, kerosene and fuel oil.

**SAFETY FACTOR: 3:1** 

### **FEATURES:**

- Higher transfer pressures
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.
  - Vacuum up to 29" of Hg

Part	1.1	D.	0	.D.	Reinf.	@	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Braids	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3045-0300-100	3	76.20	3.78	96.01	1	65	4.48	29.0	1.20	1.79	6.00	152.40	100
3045-0400-100	4	101.60	4.83	122.68	1	65	4.48	29.0	1.71	2.54	8.00	203.20	100

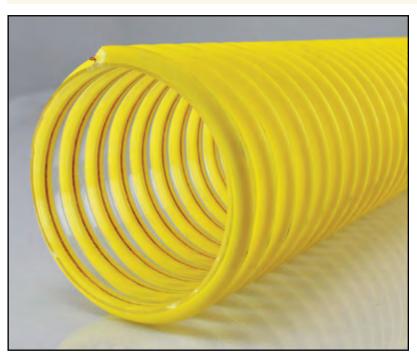
Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

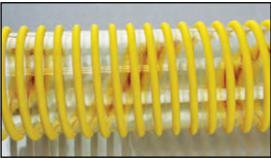
Note: Use JASON GREEN banding sleeves only when securing coupling for 3" and 4" ID's. Discharge pressures and vacuum are temperature dependent.



3050

# POLYURETHANE GASOLINE AND ALTERNATIVE FUEL VAPOR RECOVERY HOSE - $S\Omega$







**CONSTRUCTION:** Polyurethane tube with a sturdy

clockwise PVC helix with  $S\Omega$  ground wire embedded into the hose wall.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Used to remove vapors from gasoline

and alternative fuels to recovery system in tank truck operations.

**SAFETY FACTOR: 3:1** 

### **FEATURES:**

- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

Part	I.	.D.	О.	D.	Reinf.	1	c W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3050-0200-100	2	50.80	2.45	62.23	PVC Helix	10	0.69	15.0	0.50	0.74	3.00	76.20	100
3050-0300-100	3	76.20	3.54	89.92	PVC Helix	8	0.55	15.0	0.79	1.18	4.00	101.60	100
3050-0400-100	4	101.60	4.57	116.08	PVC Helix	7	0.48	12.0	1.11	1.65	5.00	127.00	100

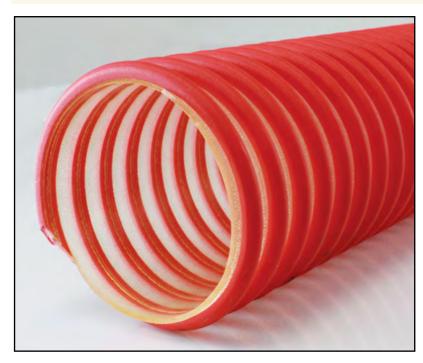
Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

Note: Use JASON YELLOW banding sleeves only when securing coupling for 2", 3" and 4" ID's.



### 3053

# HD POLYURETHANE GASLOINE AND ALTERNATIVE FUEL VAPOR RECOVERY HOSE - $S\Omega$







**CONSTRUCTION:** Polyurethane tube with a sturdy

clockwise PVC helix with  $S\Omega$  ground wire embedded into the hose wall.

**TEMPERATURE:**  $-40^{\circ}\text{F}$  ( $-40^{\circ}\text{C}$ ) to  $+140^{\circ}\text{F}$  ( $+60^{\circ}\text{C}$ )

**APPLICATION:** Used to remove vapors from gasoline

and alternative fuels to recovery system in tank truck and terminal

operations.

### **FEATURES:**

- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

**SAFETY FACTOR: 3:1** 

Part	I.	D.	0	.D.	Reinf.	1	W.P. 8°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3053-0300-100	3	76.20	3.57	90.68	PVC Helix	8	0.55	15.0	0.95	1.41	5.00	127.00	100
3053-0400-100	4	101.60	4.61	117.09	PVC Helix	7	0.48	12.0	1.27	1.89	6.00	152.40	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

Note: Use JASON YELLOW banding sleeves only when securing coupling for 3" and 4" ID's.



3085

### **OILFIELD CLEAN-UP & SPILL RECOVERY HOSE**







CONSTRUCTION: NBR/PVC tube with a PVC

clockwise helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**BRANDING:** None

**APPLICATION:** Great for the recovery of waste crude

oil, diesel fuel and salt water. Used for cleaning up tank bottoms and oil spills.

### **FEATURES:**

- NBR/PVC tube is oil and gas resistant
- Very flexible and easy to handle
- All sizes are full vacuum
- Cold weather resistant

**SAFETY FACTOR: 3:1** 

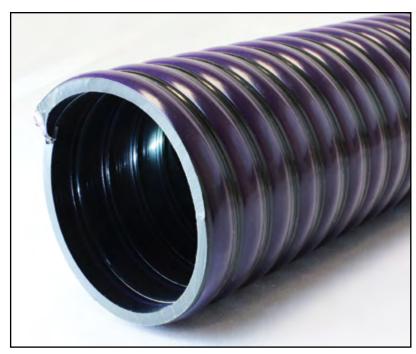
Part		.D.	C	).D.	Reinf.	Max \ 68	N.P.@ °F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm	riciii.	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3085-0200-100	2	50.80	2.43	61.72	PVC Helix	50	3.45	29.0	0.67	1.00	4.00	101.60	100
3085-0300-100	3	76.20	3.52	89.41	PVC Helix	45	3.10	29.0	1.10	1.64	6.00	152.40	100
3085-0400-100	4	101.60	4.60	116.84	PVC Helix	38	2.62	29.0	1.84	2.74	8.20	208.30	100

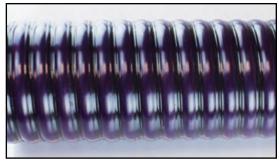
Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

Note: Vacuum is temperature dependent.



### 3087 SAFETY OILFIELD CLEAN-UP AND RECOVERY HOSE - SΩ







CONSTRUCTION: NBR/PVC tube with a PVC

clockwise helix with an  $S\Omega$  ground

wire

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**BRANDING: None** 

**APPLICATION:** Great for the recovery of waste crude

oil, diesel fuel and salt water. Used for cleaning up tank bottoms and oil spills.

### **FEATURES:**

- NBR/PVC tube is oil and gas resistant
- Very flexible and easy to handle
- All sizes are full vacuum
- Cold weather resistant
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

**SAFETY FACTOR: 3:1** 

Part	ı	.D.	C	).D.	Reinf.	1	W.P. 68°F	Vacuum	We	ight		nimum I Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3087-0200-100	2	50.80	2.43	61.72	PVC Helix	50	3.45	29.0	0.67	1.00	4.00	101.60	100
3087-0300-100	3	76.20	3.52	89.41	PVC Helix	45	3.10	29.0	1.10	1.64	6.00	152.40	100
3087-0400-100	4	101.60	4.60	116.84	PVC Helix	38	2.62	29.0	1.84	2.74	8.20	208.30	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

Note: Vacuum is temperature dependent.



4420

### **NITRILE PETROLEUM SUCTION HOSE - 150 PSI**







CONSTRUCTION: Tube nitrile, smooth and black.

ARPM Class A. Cover is CR, ARPM Class B. Reinforcement is two synthetic plies with a dual wire helix.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4420 PETROLEUM SUCTION

WP 150 PSI 10.35 BAR. Red mylar longitudinal stripe. **APPLICATION:** For suction or discharge of petroleumbased products in truck and car operations.

### **FEATURES:**

- Increased flexibility due to the dual wire helix
- Nitrile tube is highly oil resistant. Enables hose to handle petroleum products having an aromatic content up to 50%
- Weather and ozone resistant

**SAFETY FACTOR: 3:1** 

Part	1.0	D.	0	.D.	Reinf.		W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4420-0075-100	3/4	19.05	1.14	28.96	2	150	10.35	29.0	0.36	0.54	4.00	101.60	100
4420-0100-100	1	25.40	1.38	35.00	2	150	10.35	29.0	0.49	0.73	6.00	152.40	100
4420-0125-100	1-1/4	31.75	1.69	42.93	2	150	10.35	29.0	0.81	1.21	6.00	152.40	100
4420-0150-050	1-1/2	38.10	2.00	50.80	2	150	10.35	29.0	0.91	1.35	6.50	165.10	50
4420-0150-100	1-1/2	38.10	2.00	50.80	2	150	10.35	29.0	0.91	1.35	6.50	165.10	100
4420-0200-100	2	50.80	2.52	64.01	2	150	10.35	29.0	1.14	1.70	8.00	203.20	100
4420-0200-200	2	50.80	2.52	64.01	2	150	10.35	29.0	1.14	1.70	8.00	203.20	200
4420-0250-100	2-1/2	63.50	3.06	77.72	2	150	10.35	29.0	1.76	2.62	12.00	304.80	100
4420-0300-100	3	76.20	3.54	89.92	2	150	10.35	29.0	2.42	3.60	16.00	406.40	100
4420-0300-200	3	76.20	3.54	89.92	2	150	10.35	29.0	2.42	3.60	16.00	406.40	200
4420-0400-100	4	101.60	4.60	116.84	2	150	10.35	29.0	2.69	4.00	18.00	457.20	100
4420-0400-200	4	101.60	4.60	116.84	2	150	10.35	29.0	2.69	4.00	18.00	457.20	200
4420-0600-020	6	152.40	6.86	174.24	2	150	10.35	29.0	6.28	9.35	30.00	762.00	20
4420-0600-100	6	152.40	6.86	174.24	2	150	10.35	29.0	6.28	9.35	30.00	762.00	100
4420-0800-020	8	203.20	8.90	226.06	2	150	10.35	29.0	7.12	10.60	48.00	1219.20	20
4420-0800-050	8	203.20	8.90	226.06	2	150	10.35	29.0	7.12	10.60	48.00	1219.20	50



### 4421

### TANK TRUCK HOSE - RED CORRUGATED







**CONSTRUCTION:** Tube is nitrile, smooth, ARPM

Class A. Cover is CR, ARPM Class B, corrugated and red. Reinforcement is two synthetic plies with a wire

helix.

**TEMPERATURE:**  $-30^{\circ}\text{F}$  ( $-34^{\circ}\text{C}$ ) to  $+180^{\circ}\text{F}$  ( $+82^{\circ}\text{C}$ )

**BRANDING:** Jason logo 4421 PETROLEUM SUCTION

WP 150 PSI 10.35 BAR. White mylar longitudinal stripe. **APPLICATION:** For the transfer of petroleum products, including gasoline under pressure, gravity flow and tank farms at oil/gas drilling sites.

### **FEATURES:**

- Increased flexibility due to the corrugated cover
- Lightweight, easier to handle
- Cover is resistant to weathering and abrasion

**SAFETY FACTOR: 3:1** 

Part	l.	D.	O	.D.	Reinf.	1	W.P. 8°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4421-0200-100	2	50.80	2.48	63.00	2	150	10.35	29.0	1.18	1.76	4.00	101.60	100
4421-0300-100	3	76.20	3.50	89.00	2	150	10.35	29.0	1.99	2.96	6.00	152.40	100
4421-0400-100	4	101.60	4.57	116.00	2	150	10.35	29.0	2.66	3.96	9.00	228.60	100
4421-0600-100	6	152.40	6.77	172.00	2	150	10.35	29.0	6.30	9.41	25.00	637.50	100



### 4423 BIO-DIESEL/ETHANOL SUCTION AND DISCHARGE HOSE - SΩ







**CONSTRUCTION:** Tube is ultra-high molecular weight

polyethylene (UHMWPE). Cover is

CR, smooth and black.

Reinforcement is a two-ply synthetic fabric with a dual wire helix and two

conductive copper wires.

**TEMPERATURE:** -31°F (-35°C) to +176°F (+80°C)

BRANDING: Jason logo 4423 BIO-DIESEL B-20 MAX

ETHANOL E-20 MAX SUCTION 150 PSI

10.35 BAR.

Red mylar longitudinal stripe

**APPLICATION:** For the suction and discharge of bio-diesel and ethanol blended fuels.

#### **FEATURES:**

- UHMWPE gives maximum resistance to today's bio-fuels
- Cover is resistant to weathering and abrasion
- Heat and ozone resistant
- Dual conductive copper wires makes it easy to ground the hose
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.
- All sizes are full vacuum

**SAFETY FACTOR: 3:1** 

Part	1.0	<b>)</b> .	О.	D.	Reinf.		W.P. 8°F	Vacuum	We	ight	1	imum Radius	Std. Length
Number	in.	mm	in.	in. mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4423-0100-100	1	25.40	1.42	36.00	2	150	10.35	29.0	0.49	0.73	6.00	152.40	100
4423-0125-100	1-1/4	31.75	1.68	42.67	2	150	10.35	29.0	0.62	0.92	7.00	177.80	100
4423-0150-100	1-1/2	38.10	1.93	49.00	2	150	10.35	29.0	0.75	1.12	8.00	203.20	100
4423-0200-100	2	50.80	2.48	63.00	2	150	10.35	29.0	1.16	1.72	12.00	304.80	100
4423-0300-100	3	76.20	3.50	89.00	2	150	10.35	29.0	1.81	2.69	14.00	355.60	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

Consult with engine manufacturers for warranted blends (B-5 to B-100 & E-5 to E-100)



### 4414

### **NITRILE PETROLEUM SUCTION HOSE - 300 PSI**







**CONSTRUCTION:** Tube nitrile, smooth and black.

ARPM Class A. Cover is CR, ARPM Class B. Reinforcement is two-ply synthetic fabric with a dual wire helix.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4414 PETROLEUM SUCTION

WP 300 PSI 20.70 BAR. Red mylar longitudinal stripe. **APPLICATION:** For the transfer of petroleum products,

including gasoline under pressure and gravity flow.

gravit

### **FEATURES:**

- HD construction that handles up to 300 PSI applications
- Cover is resistant to weathering and abrasion
- Heat and ozone resistant
- All sizes are full vacuum

**SAFETY FACTOR: 3:1** 

Part	ı	.D.	O	.D.	Reinf.	_	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4414-0100-100	1	25.40	1.46	37.08	2	300	20.70	29.0	0.53	0.79	3.50	88.90	100
4414-0125-100	1-1/4	31.75	1.73	43.94	2	300	20.70	29.0	0.70	1.04	4.00	101.60	100
4414-0150-100	1-1/2	38.10	2.00	50.80	2	300	20.70	29.0	0.92	1.37	5.00	127.00	100
4414-0200-100	2	50.80	2.50	63.50	2	300	20.70	29.0	1.27	1.89	8.00	203.20	100
4414-0200-200	2	50.80	2.50	63.50	2	300	20.70	29.0	1.27	1.89	8.00	203.20	200
4414-0250-100	2-1/2	63.50	3.11	78.99	2	300	20.70	29.0	1.66	2.47	10.00	254.00	100
4414-0300-100	3	76.20	3.62	91.95	2	300	20.70	29.0	2.19	3.26	12.00	304.80	100
4414-0300-200	3	76.20	3.62	91.95	2	300	20.70	29.0	2.19	3.26	12.00	304.80	200
4414-0400-100	4	101.60	4.65	118.11	2	300	20.70	29.0	2.89	4.30	17.00	431.80	100
4414-0400-200	4	101.60	4.65	118.11	2	300	20.70	29.0	2.89	4.30	17.00	431.80	200
4414-0600-100	6	152.40	6.91	175.51	2	300	20.70	29.0	6.47	9.96	27.00	685.80	100
4414-0800-020	8	203.20	8.98	228.00	2	300	20.70	29.0	6.92	10.30	48.00	1219.20	20



4424

### NITRILE PETROLEUM SUCTION HOSE - 400 PSI - $S\Omega$







**CONSTRUCTION:** Tube is nitrile, black and smooth,

ARPM Class A. Cover is CR, black, ARPM Class B. Reinforcement is a two-ply synthetic fabric with a dual wire helix.

**TEMPERATURE:** -31°F (-35°C) to +158°F (+70°C)

**BRANDING:** Jason logo 4424 PETROLEUM SUCTION

WP 400 PSI 27.6 BAR. Red mylar longitudinal stripe

**SAFETY FACTOR: 3:1** 

**APPLICATION:** For the transfer of petroleum products, including gasoline under pressure or gravity flow (suction or discharge).

### **FEATURES:**

- HD construction that handles up to 400 PSI applications
- Cover is resistant to weathering and abrasion
- Heat, sea water and ozone resistant
- All sizes are full vaccum
- Construction is with high tensile strength textile
- Dual copper wires to ground the hose
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

Part		I.D.	O	.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4424-0200-100	2	50.80	2.82	71.63	2	400	27.56	29.0	1.89	2.81	12.00	304.80	100
4424-0200-200	2	50.80	2.82	71.63	2	400	27.56	29.0	1.89	2.81	12.00	304.80	200
4424-0300-100	3	76.20	3.88	98.55	2	400	27.56	29.0	2.95	4.39	20.00	508.00	100
4424-0300-200	3	76.20	3.88	98.55	2	400	27.56	29.0	2.95	4.39	20.00	508.00	200
4424-0400-100	4	101.60	4.92	124.50	2	400	27.56	29.0	3.85	5.72	30.00	762.00	100
4424-0400-200	4	101.60	4.92	124.50	2	400	27.56	29.0	3.85	5.72	30.00	762.00	200

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

 $S\Omega$  = Safety Ohm



### 4328

### NITRILE FUEL DISCHARGE HOSE - 300 PSI - $S\Omega$







**CONSTRUCTION:** Tube is nitrile, smooth, ARPM

Class A. Cover is CR, black, ARPM Class B. Reinforcement is two-ply synthetic fabric with a static wire.

**TEMPERATURE:** -25°F (-32°C) to +200°F (+93°C)

**BRANDING:** Jason logo 4328 FUEL DISCHARGE WP

300 PSI 20.7 BAR.

Red mylar longitudinal stripe.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** For discharge only. For petroleum-based products in truck and car applications.

### **FEATURES:**

- HD construction that handles up to 300 PSI applications
- Cover is resistant to weathering and abrasion
- Class A tube is highly oil resistant and handles gasoline and other petroleum products having an aromatic content of 50%.
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

Part Number	I.	.D.	0	.D.	Reinf. Plies	1	x W.P. 68°F	Vacuum @ 68°F	We	ight		imum Radius	Std. Length
Number	in.	mm		mm	Piles	PSI	BAR	₩ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4328-0200-100	2	50.80	2.64	67.06	2	300	20.68	n/a	1.35	2.01	11.00	275.00	100
4328-0250-100	2-1/2	63.50	3.13	79.50	2	300	20.68	n/a	1.55	2.30	12.00	300.00	100
4328-0300-100	3	76.20	3.67	93.22	2	300	20.68	n/a	1.88	2.80	14.00	350.00	100
4328-0400-100	4	101.60	4.61	117.09	2	300	20.68	n/a	2.57	3.82	18.00	450.00	100
4328-0500-100	5	127.00	5.67	144.02	2	300	20.68	n/a	4.09	6.08	24.00	600.00	100



### 4348 FRACK OILFIELD FUEL DISCHARGE HOSE - 400 PSI - $S\Omega$







**CONSTRUCTION:** Tube is nitrile, black and smooth,

ARPM Class C. Cover is an EPDM/ SBR blend. Reinforcement is a four-ply synthetic fabric with a

static wire.

**TEMPERATURE:** -25°F (-32°C) to +180°F (+82°C)

**BRANDING:** Jason logo 4348 FRAC DISCHARGE WP

400 PSI 27.6 BAR.

Red mylar longitudinal stripe.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** To discharge or convey water and oil slurry mixtures for the connections to frack tanks.

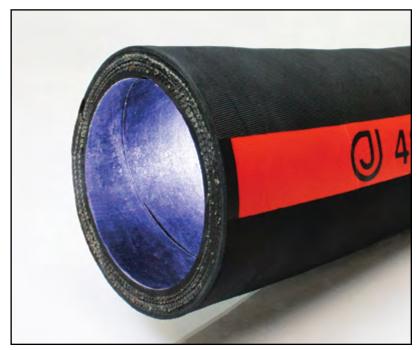
### **FEATURES:**

- HD construction that handles up to 400 PSI applications.
- Cover is resistant to weathering and abrasion.
- Class C tube is oil resistant and will handle gasoline and other petroleum products having an aromatic content of 50%.
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

Part		I.D.	0	.D.	Reinf. Plies		x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4348-0300-100	3	76.20	3.87	93.30	4	400	27.60	n/a	2.52	3.74	18.00	457.20	100
4348-0400-100	4	101.60	4.76	120.90	4	400	27.60	n/a	2.83	4.21	24.00	600.00	100



### 4368 HD OILFIELD LIQUID MUD DISCHARGE HOSE - 600 PSI - $S\Omega$







**CONSTRUCTION:** Tube is a synthetic rubber blend.

Cover is CR. Reinforcement is a two-ply high-tensile synthetic textile with an

anti-static copper wire.

**TEMPERATURE:** -31°F (-35°C) to +176°F (+80°C)

**BRANDING:** Jason logo 4368 HD OILFIELD LIQUID MUD

(600 PSI) 41.4 BAR.

Red mylar longitudinal stripe.

**APPLICATION:** The discharge of high pressure liquid mud,

mineral oils, etc. Also used in oil and gas

exploration and oil rig platforms.

### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Cover is flame retardant
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

**SAFETY FACTOR: 4:1** 

### Not Recommended for Refined Petroleum Products!

Part		I.D.	0	.D.	Reinf.	1	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4368-0300-100	3	76.20	3.82	97.03	2	600	41.40	n/a	2.51	3.73	29.92	760.00	100
4368-0400-100	4	101.60	4.96	125.98	2	600	41.40	n/a	3.83	5.69	40.16	1020.00	100



4436

### **OILFIELD PETRO WASTE SUCTION HOSE**







CONSTRUCTION: Tube is an NBR/SBR blend, black and

smooth, oil resistant. Cover is an NBR/ PVC blend, black, flat corrugated w/ cloth impression, oil, abrasion, weather and ozone resistant. Reinforcement is a high tensile cord with a dual steel wire helix.

**TEMPERATURE:** -22°F (-30°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4436 OILFIELD PETRO WASTE

SUCTION WP (150PSI) 10.35 BAR. Blue mylar longitudinal stripe.

**APPLICATION:** Designed to transfer petroleum waste, sediments, sludge, diluted mild chemi cals, brine and water in oil filled tank and waste pit recovery applications. Not suitable for refined petroleum products or high concentrations of chemicals.

#### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Heat and ozone resistant
- Dual steel wires to ground the hose
- · Light, flexible, easy-to-use

**SAFETY FACTOR: 3:1** 

Part	ı	.D.	o	.D.	Reinf.	-	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4436-0200-100	2	50.80	2.48	63.00	2	150	10.35	26.0	1.04	1.55	5.00	128.00	100
4436-0300-100	3	76.20	3.50	89.00	2	150	10.35	26.0	1.75	2.60	7.50	190.00	100
4436-0400-100	4	101.60	4.53	115.00	2	150	10.35	26.0	2.19	3.25	10.00	255.00	100
4436-0600-020	6	152.40	6.65	169.00	2	150	10.35	26.0	4.41	6.57	24.00	608.00	20
4436-0600-050	6	152.40	6.65	169.00	2	150	10.35	26.0	4.41	6.57	24.00	608.00	50
4436-0600-100	6	152.40	6.65	169.00	2	150	10.35	26.0	4.41	6.57	24.00	608.00	100
4436-0800-020	8	203.20	8.82	224.00	2	150	10.35	26.0	7.36	10.97	32.00	812.00	20
4436-0800-050	8	203.20	8.82	224.00	2	150	10.35	26.0	7.36	10.97	32.00	812.00	50



#### 4426

### **DREAMFLEX PETROLEUM** TRANSFER AND SUCTION HOSE - $S\Omega$







**CONSTRUCTION:** Tube is nitrile, black and smooth,oil and gas resistant. Cover is nitrile, black, flat corrugated and oil resistant. Reinforcement is a synthetic textile with a dual steel helix with an anti-static copper wire.

**TEMPERATURE:** -40°F (-40°C) to +194°F (+90°C)

**BRANDING:** Jason logo 4426 DREAMFLEX PETROLEUM

TRANSFER and SUCTION WP PSI (BAR)

Red mylar longitudinal stripe.

**APPLICATION:** For suction and discharge of petroleum products with aromatic content up to 50%

#### **FEATURES:**

- Extremely flexible. Superior Minimum Bend Radius
- Cover is resistant to weathering and abrasion
- Heat, ozone and salt water resistant
- Anti-static copper wire to ground the hose
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.  $S\Omega$  wire must be secured to ground to dissipate static electricity.

**SAFETY FACTOR: 4:1** 

Part	ı	.D.	0.	.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4426-0075-100	3/4	19.10	1.18	30.00	2	250	17.24	26.0	0.34	0.51	0.75	19.00	100
4426-0100-100	1	25.40	1.50	38.00	2	250	17.24	26.0	0.51	0.76	1.00	25.00	100
4426-0150-100	1-1/2	38.10	1.93	49.00	2	250	17.24	26.0	0.65	0.97	1.50	38.00	100
4426-0200-100	2	50.80	2.41	61.20	2	250	17.24	26.0	0.93	1.38	2.00	51.00	100
4426-0250-100	2-1/2	63.50	3.03	77.00	2	200	13.79	26.0	1.35	2.01	2.50	63.50	100
4426-0300-100	3	76.20	3.54	90.00	2	200	13.79	26.0	1.64	2.45	3.00	75.20	100
4426-0400-100	4	101.60	4.57	116.00	2	150	10.35	26.0	2.40	3.59	4.00	101.60	100
4426-0600-100	6	152.40	6.75	171.6	2	150	10.35	26.0	5.73	8.5	6.00	152.40	100



4410

# BLUE LOW TEMP PETROLEUM SUCTION HOSE - CORRUGATED







CONSTRUCTION: Tube is nitrile, black and smooth,

ARPM Class A. Cover is CR, blue, corrugated, ARPM Class B. Reinforcement is a two-ply synthetic fabric with a double wire

nelix.

**TEMPERATURE:** -65°F (-55°C) to +180°F (+82°C)

**BRANDING:** Jason logo 4410 LOW TEMP PETROLEUM

SUCTION -65°F (-55°C) 150 PSI WP 10.35 BAR. White mylar longitudinal stripe.

**APPLICATION:** The transfer of petroleum products, including gasoline under pressure or gravity flow.

#### **FEATURES:**

- Cover is resistant to weathering, abrasion, and the exposure to oil.
- Compounded to resist extreme cold temperatures to -65°F.
- Remains flexible, even under extreme cold temperatures.
- All sizes are full vacuum.

**SAFETY FACTOR: 3:1** 

Part Number		I.D.	o	.D.	Reinf. Plies	-	x W.P. 68°F	Vacuum @ 68°F	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	₩ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4410-0300-100	3	76.20	3.55	90.17	2	150	10.35	29.0	1.83	2.72	6.00	151.20	100
4410-0400-100	4	101.60	4.59	116.59	2	150	10.35	29.0	2.39	3.56	9.00	226.80	100



### 4409

### DRILLING MUD, OILFIELD SUCTION AND DISCHARGE HOSE - 150 PSI







**CONSTRUCTION:** Tube is a synthetic and natural rubber

blend. Cover is SBR blend.

Reinforcement is a 4-ply high-tensile synthetic textile with a single wire helix. Dual wire helix for 8", 10" and 12" I.D.'s.

**TEMPERATURE:** -13°F (-25°C) to +158°F (+70°C)

**BRANDING:** Jason logo 4409 DRILLING MUD, OILFIELD

SUCTION AND DISCHARGE WP (150PSI) 10.35 BAR. Red mylar longitudinal stripe.

SAFETY FACTOR: 3:1

**APPLICATION:** The transfer of drilling mud for oil and gas exploration, well service and fracking.

#### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Tube is abrasion resistant
- 1"I.D. to 6" I.D. full vacuum

# Not Recommended for Refined Petroleum Products!

Part	ı	.D.	0	.D.	Reinf.	_	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4409-0100-100	1	25.40	1.34	34.04	4	150	10.35	28.00	0.40	0.60	3.54	90.00	100
4409-0150-100	1-1/2	38.10	1.89	48.01	4	150	10.35	28.00	0.75	1.11	5.31	135.00	100
4409-0200-100	2	50.80	2.44	61.98	4	150	10.35	28.00	1.13	1.68	7.87	200.00	100
4409-0250-100	2-1/2	63.50	2.95	74.93	4	150	10.35	28.00	1.42	2.12	10.63	270.00	100
4409-0300-100	3	76.20	3.50	88.90	4	150	10.35	28.00	1.85	2.75	13.39	340.00	100
4409-0400-100	4	101.60	4.53	115.06	4	150	10.35	28.00	2.56	3.81	17.72	450.00	100
4409-0600-100	6	1542.40	6.61	167.89	4	150	10.35	28.00	4.83	7.19	27.56	700.00	100
4409-0800-020	8	203.20	8.86	225.04	4	150	10.35	28.00	8.88	13.22	43.31	1100.00	20
4409-1000-020	10	254.00	10.98	278.89	4	150	10.35	28.00	12.27	18.26	59.06	1500.00	20
4409-1200-020	12	304.80	12.95	328.93	4	150	10.35	28.00	13.90	20.68	74.80	1900.00	20



### 4411 OILFIELD SUCTION & DISCHARGE HOSE - 150 PSI - SΩ







CONSTRUCTION: Tube is a nitrile blend blend. Cover is an

NBR/PVC blend. Reinforcement is a 4-ply high-tensile synthetic textile with a single wire helix. Dual wire helix for 8", 10" and 12" I.D.'s. and has an anti-static copper wire.

**TEMPERATURE:** -31°F (-35°C) to +158°F (+70°C)

**BRANDING:** Jason logo 4411 OILFIELD SUCTION AND

DISCHARGE WP (150PSI) 10.35 BAR.

Red mylar longitudinal stripe.

**SAFETY FACTOR:** 3:1

**APPLICATION:** The transfer of drilling mud or crude oil. For use with petroleum products with aromatic content up to 50%

#### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Tube is abrasion resistant
- 1" to 6", full vacuum
- Anti-static copper wire to ground the hose
- Safety Ohm (SΩ) ground wire embedded into the hose wall to help prevent the build-up of static electricity.
   SΩ wire must be secured to ground to dissipate static electricity.

Part	ı	.D.	0	.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4411-0150-100	1-1/2	38.10	1.93	49.02	4	150	10.35	28.00	0.75	1.11	4.33	110.00	100
4411-0200-100	2	50.80	2.48	62.99	4	150	10.35	28.00	1.06	1.58	6.69	170.00	100
4411-0250-100	2-1/2	63.50	2.99	75.95	4	150	10.35	28.00	1.37	2.04	8.27	210.00	100
4411-0300-100	3	76.20	3.50	88.90	4	150	10.35	28.00	1.81	2.69	9.06	230.00	100
4411-0400-100	4	101.60	4.61	117.09	4	150	10.35	28.00	2.62	3.90	15.75	400.00	100
4411-0600-100	6	1542.40	6.69	169.93	4	150	10.35	28.00	5.08	7.56	26.57	675.00	100
4411-0800-020	8	203.20	8.98	228.09	4	150	10.35	28.00	9.27	13.79	40.35	1025.00	20
4411-1000-020	10	254.00	11.10	281.94	4	150	10.35	28.00	12.30	18.30	57.09	1450.00	20

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

SΩ = Safety Ohm

All sizes may not be stocked in all locations. Check with customer service for availability.

We disclaim any liability for use of our products in applications other than which they are designed.





### 4413

### **OILFIELD VAC HOSE - 150 PSI**







CONSTRUCTION: Tube is a nitrile blend blend. Cover is

corrugated SBR blend. Reinforcement is a 4-ply high-tensile synthetic textile with

a dual steel wire helix.

**TEMPERATURE:** -22°F (-30°C) to +176°F (+80°C)

**BRANDING:** Jason logo 4413 OILFIELD VACUUM

WP (150PSI) 10.35 BAR. Red mylar longitudinal stripe.

**APPLICATION:** The transfer of drilling mud or crude oil. Used in oil and gas exploration, fracking and wells service

#### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Tube can handle crude oil and drilling mud
- 1" to 6", full vacuum.

**SAFETY FACTOR: 3:1** 

#### Not recommended for Refined Petroleum Products!

Part	I	.D.	0.	.D.	Reinf.	1	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4413-0150-100	1-1/2	38.10	1.78	45.21	4	150	10.35	28.00	0.72	1.07	4.53	110.00	100
4413-0200-100	2	50.80	2.41	61.21	4	150	10.35	28.00	1.06	1.58	5.71	170.00	100
4413-0250-100	2-1/2	63.50	3.17	80.52	4	150	10.35	28.00	1.42	2.12	7.68	210.00	100
4413-0300-100	3	76.20	3.58	90.93	4	150	10.35	28.00	1.81	2.70	9.45	230.00	100
4413-0400-100	4	101.60	4.58	116.33	4	150	10.35	28.00	2.60	3.87	13.39	400.00	100
4413-0600-100	6	1542.40	6.75	171.45	4	150	10.35	28.00	5.09	7.57	25.59	675.00	100
4413-0800-020	8	203.20	8.84	224.54	4	150	10.35	28.00	9.09	13.52	35.43	1025.00	20
4413-1000-020	10	254.00	10.88	276.35	4	150	10.35	28.00	12.02	17.89	55.12	1450.00	20



### 4415

### **OIL RETURN HOSE SAE 100R4**







**CONSTRUCTION:** Tube is nitrile, black and smooth,

ARPM Class A. Cover is CR, black, ARPM Class B. Reinforcement is a two-ply synthetic fabric with a

wire helix.

**TEMPERATURE:** -40°F (-40°C) to +212°F (+100°C)

**BRANDING:** Jason logo 4415 SAE 100R4 RETURN LINE.

Red mylar longitudinal stripe.

**APPLICATION:** For oil return lines of hydraulic systems in industrial and agricultural systems.

#### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Class A tube is highly oil resistant and will handle petroleum products having an aromatic content of 50%
- All sizes are full vaccum

**SAFETY FACTOR: 3:1** 

Part	ı	.D.	0	.D.	Reinf. Plies		x W.P. 68°F	Vacuum @ 68°F	We	ight	1	imum Radius	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	@ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4415-0075-100	3/4	19.05	1.25	31.75	2	300	20.68	29.0	0.45	0.67	4.00	101.60	100
4415-0100-100	1	25.40	1.47	37.34	2	250	17.24	29.0	0.50	0.74	4.50	114.30	100
4415-0125-100	1-1/4	31.75	1.77	44.96	2	200	13.79	29.0	0.64	0.95	6.00	152.40	100
4415-0150-100	1-1/2	38.10	2.05	52.07	2	150	10.35	29.0	0.80	1.19	6.50	165.10	100
4415-0200-100	2	50.80	2.51	63.75	2	150	10.35	29.0	0.99	1.47	8.00	203.20	100

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

† Note: In the future this product will be moved to our hydraulic catalog.

The Series number will change from 4415 to 5040.



### 4418

### **CRUDE OIL WASTE PIT SUCTION HOSE**

**SMOOTH COVER - DO NOT USE WITH REFINED PETROLEUM** 







**CONSTRUCTION:** Tube and cover are EPDM.

Reinforcement is a two-ply synthetic fabric with a wire helix.

**TEMPERATURE:** -40°F (-40°C) to +150°F (+66°C)

**BRANDING:** Jason logo 4418 CRUDE OIL WASTE PIT

SUCTION WP 150 PSI 10.35 BAR. Do not

use with refined petroleum. Red mylar longitudinal stripe. **APPLICATION:** Used for applications where full suction is

required. Great for applications handling crude oil, salt and fresh water, tank bottoms

and diesel fuels.

#### **FEATURES:**

- Weather and abrasion resistant
- All sizes are full vacuum

**SAFETY FACTOR: 3:1** 

Part Number	ı	.D.	0.	.D.	Reinf. Plies		x W.P. 68°F	Vacuum @ 68°F	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	@ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4418-0150-100	1-1/2	38.10	2.01	51.00	2	150	10.35	29.0	0.77	1.15	5.30	135.00	100
4418-0200-100	2	50.80	2.50	63.50	2	150	10.35	29.0	0.99	1.47	7.90	200.00	100
4418-0300-100	3	76.20	3.56	90.50	2	150	10.35	29.0	1.76	2.62	13.40	340.00	100
4418-0400-100	4	101.60	4.57	116.00	2	150	10.35	29.0	2.29	3.42	17.70	450.00	100
4418-0600-100	6	152.40	6.61	168.00	2	150	10.35	29.0	4.69	7.00	26.80	680.00	100
4418-0800-020	8	203.20	8.82	224.00	2	150	10.35	29.0	8.34	12.46	37.80	960.00	20



4419

### **CRUDE OIL WASTE PIT SUCTION HOSE**

**CORRUGATED COVER - DO NOT USE WITH REFINED PETROLEUM** 







**CONSTRUCTION:** Tube and cover are EPDM.

Reinforcement is a two-ply synthetic fabric with a wire helix.

**TEMPERATURE:** -40°F (-40°C) to +150°F (+66°C)

BRANDING: Jason logo 4419 CRUDE OIL WASTE PIT

SUCTION WP 150 PSI 10.35 BAR. Do not

use with refined petroleum. Red mylar longitudinal stripe. **APPLICATION:** Used for applications where full suction is

required. Great for applications handling crude oil, salt and fresh water, tank bottoms

and diesel fuels.

#### **FEATURES:**

- Weather and abrasion resistant
- All sizes are full vacuum
- Corrugated cover makes this hose very flexible

**SAFETY FACTOR: 3:1** 

Part		.D.	0	.D.	Reinf.	-	x W.P. 68°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4419-0150-100	1-1/2	38.10	2.01	51.00	2	150	10.35	29.0	0.77	1.15	5.30	135.00	100
4419-0200-100	2	50.80	2.50	63.50	2	150	10.35	29.0	0.99	1.47	7.90	200.00	100
4419-0300-100	3	76.20	3.56	90.50	2	150	10.35	29.0	1.76	2.62	13.40	340.00	100
4419-0400-100	4	101.60	4.57	116.00	2	150	10.35	29.0	2.29	3.42	17.70	450.00	100



### 4429

### **HOT TAR AND ASPHALT SUCTION HOSE - 150 PSI**







**CONSTRUCTION:** Tube is a special elastomer

compound, black and smooth, that is synthetic oil, abrasion and heat resistant. Cover is a blend of synthetic elastomer compounds, black and smooth, and anti-static. Reinforcement is a two-or-four-ply high tensile cord with a steel wire helix.

**TEMPERATURE:** -22°F (-30°C) to +356°F (+180°C)

BRANDING: Jason logo 4429 HOT ASPHALT 356°F/180°C

150 PSI 4:1. Embossed brand.

**APPLICATION:** Hose is specially designed for conveying hot tar and asphalt.

#### **FEATURES:**

- Cover is resistant to weathering and abrasion
- Cover is also anti-static, oil and heat resistant
- Special tube compound is heat (up to 356°F) and abrasion resistant.
- All sizes are full vacuum.

**SAFETY FACTOR:** 3:1

Part		I.D.	o	.D.	Reinf.	-	x W.P. 68°F	Vacuum	We	ight	1	imum Radius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4429-0200-100	2	50.80	2.72	69.00	2	150	10.35	29.0	1.77	2.65	10.00	254.00	100
4429-0300-100	3	76.20	3.78	96.00	2	150	10.35	29.0	2.82	4.21	15.00	380.00	100
4429-0400-100	4	101.60	4.80	122.00	4	150	10.35	29.0	3.82	5.70	20.00	510.00	100



# **STEAM HOSE**

# FOR THE TRANSFER OF SATURATED STEAM

SERIES
4815 EPDM Steam Hose 85

Steam Hose Safety Recommendations 86

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.



# **STEAM HOSE**



### 4815

### **EPDM STEAM HOSE**







**CONSTRUCTION:** The tube and cover are EPDM. The

cover is pin-pricked with fabric impression. Reinforcement is two

plies of steel wire.

TEMPERATURE: To +450°F (+232°C)

BRANDING: Jason logo 4815 EPDM WP 250 PSI

17.25 BAR. DRAIN AFTER USE. Reverse white mylar longitudinal stripe. **APPLICATION:** For the conveyance of steam in

chemical/petroleum, food, lumber, pulp and processing industries.

FEATURES:

- High working pressure
- High temperature rating
- Cover is weather and ozone resistant

 Cover is pin-pricked to allow venting to eliminate blistering and cover separation

**SAFETY FACTOR: 10:1** 

#### **WARNING!**: Do not use Universal Couplings with Steam Hose

Part	I.	D.	0	.D.	Reinf.		k W.P. 68°F	Vacuum	Wei	ight		ım Bend dius	Std. Length
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4815-0050-050	1/2	12.70	1.00	25.40	2	250	17.25	n/a	0.40	0.60	5.90	150.00	50
4815-0050-100	1/2	12.70	1.00	25.40	2	250	17.25	n/a	0.40	0.60	5.90	150.00	100
4815-0075-050	3/4	19.05	1.25	31.75	2	250	17.25	n/a	0.51	0.76	8.30	210.00	50
4815-0075-100	3/4	19.05	1.25	31.75	2	250	17.25	n/a	0.51	0.76	8.30	210.00	100
4815-0100-050	1	25.40	1.50	38.10	2	250	17.25	n/a	0.67	1.00	11.00	280.00	50
4815-0100-100	1	25.40	1.50	38.10	2	250	17.25	n/a	0.67	1.00	11.00	280.00	100
4815-0125-050	1-1/4	31.75	1.81	46.04	2	250	17.25	n/a	0.87	1.29	14.00	355.00	50
4815-0125-100	1-1/4	31.75	1.81	46.04	2	250	17.25	n/a	0.87	1.29	14.00	355.00	100
4815-0150-050	1-1/2	38.10	2.13	54.61	2	250	17.25	n/a	1.11	1.65	16.50	420.00	50
4815-0150-100	1-1/2	38.10	2.13	54.61	2	250	17.25	n/a	1.11	1.65	16.50	420.00	100
4815-0200-050	2	50.80	2.64	67.07	2	250	17.25	n/a	1.80	2.68	22.00	560.00	50
4815-0200-100	2	50.80	2.64	67.07	2	250	17.25	n/a	1.80	2.68	22.00	560.00	100
4815-0300-050	3	76.20	3.81	96.84	2	250	17.25	n/a	3.17	4.72	30.00	762.00	50



## **STEAM HOSE**

### STEAM HOSE SAFETY RECOMMENDATIONS

Handling steam is a very hazardous situation. Using care and some safety precaution can minimize or eliminate personal or property damage.

#### **SELECTING AND USING STEAM HOSE**

- Make sure steam hose is identified as a steam hose. It should be branded as such, stating working pressure and temperature rating.
- Make sure working pressure and temperature is not exceeded.
- Do not allow hose to remain under pressure when not in use.
- Avoid excess bending or flexing of hose near the coupling. Straight line operation is preferred. If bends are necessary as a part of operation, spring guards may help.
- Be sure and use recommended steam hose couplings and clamps on hose.

#### **MAINTENANCE OF STEAM HOSE**

- Periodic inspection of hose should include looking for cover blisters and lumps.
- 2. Check for kinked areas that could damage hose.
- Drain hose after each use to avoid tube damage before hose is put back in operation, to avoid "popcorning" of the tube.
- 4. Check tightness of clamps and bolts after each use.
- Check to see if clamp halves are touching. If they are, recouple hose with smaller clamps to ensure proper tightness or grip around hose.
- 6. Do not store hose over hooks.
- Steam hose laying on metal racks or installed around steel piping will dry out the hose, causing tube and cover cracking.

#### **CORROSIVE STEAM**

When the water used to generate steam contains dissolved air, oxygen or carbon dioxide, then these gases end up as contaminants in the steam. At high temperatures of steam, both oxygen and carbon dioxide are extremely corrosive.

Carbon dioxide is acidic and therefore attacks metals, whereas the oxygen corrodes metals and oxidizes rubbers. Corrosion of metals in the presence of both oxygen and acids is forty times faster than with either alone. Boiler water is therefore normally treated not only to remove the "hardness," which could cause "furring" of the boiler, but also to remove dissolved oxygen and carbon dioxide and to ensure that the steam is not only non-acidic, but even slightly alkaline. Boiler water treatment is a specialized subject beyond the scope of this technical sheet, but correct steam generation is important.

#### **DETERIORATION OF STEAM HOSE**

Like all rubber products, steam hoses have a finite life and are subject to gradual deterioration with use. However, it sometimes happens that hoses which have been giving a good life suddenly start failing without apparent reason. In such cases, it is often a change in the steam conditions causing a rapid acceleration of a normal failure mode. It is therefore useful to consider how steam hoses normally last and thus how the condition of the steam affects hose life.

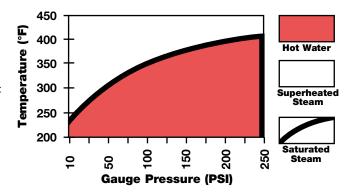
Reprinted from ARPM-11-1 Steam Hose

#### **SELECTING AND USING STEAM HOSE**

GAUGE	PRESSURE	TEMPE	RATURE
PSI	BAR	°C	°F
25	1.73	130	267
30	2.07	134	274
35	2.42	138	281
40	2.76	141	287
45	3.11	144	292
50	3.45	148	298
60	4.14	153	307
70	4.83	158	316
80	5.52	162	324
90	6.21	166	330
100	6.90	170	338
120	8.28	177	350
140	9.66	182	361
160	11.04	188	371
180	12.42	193	379
200	13.80	198	388
225	15.53	203	397
250	17.25	208	406
275	18.98	212	414
300	20.70	216	422
325	22.43	221	429
350	24.15	225	437

The chart represents the three forms of water when subjected to heat and pressure. Use only hoses specifically designed for the application.

GAUGE PRESSURE PSI	TEMPERATURE OF SATURATED STEAM (°F)
10	239
25	267
50	298
75	320
100	338
125	353
150	366
175	377
200	388
225	397
250	406





# FOR THE TRANSFER OF WATER, WASHDOWN JETTING & IRRIGATION

<ul><li>3074 HD Sub-Zero Cold Weather Clear PVC Suction Hose</li><li>3076 Heavy Duty PVC Suction and Transfer Hose</li></ul>	90 88 89
3076 Heavy Duty PVC Suction and Transfer Hose	
<b>,,</b>	89
3080 NBR/PVC Suction Hose	
4352 Rubber 2-Ply Water Discharge Hose	95
4354 Rubber 4-Ply Water Discharge Hose	96
4358 Nitrile/PVC Oil Resistant Discharge Hose - Yellow	102
4359 Nitrile/PVC Oil Resistant Discharge Hose - Black	103
4380 Non-Conductive Furnace Door Hose	97
<b>4449</b> Frac Water Suction Hose	94
4450 Rubber Water Suction Hose	93
4502 Blue PVC Water Discharge Bulk Hose & Assemblies	99
Wine Red PVC Water Discharge Hose & Assemblies - Medium Duty	100
4515 Red PVC Water Discharge Hose - HD	101
4601 Green PVC Water Suction Hose	91
4615 Clear/White Helix PVC Water Suction Hose	92
4703 HD DJ Mill Discharge Hose & Assemblies	104
4705 Municipal Grade SJ Mill Discharge Hose & Assemblies	105
4735 MSHA Fire Hose Assemblies	106
Mainstream™ Pressure Washer Assemblies	98

Hoses are constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.



### 3076

### **HEAVY-DUTY PVC SUCTION AND TRANSFER HOSE**







CONSTRUCTION: PVC tube and sturdy clockwise PVC

helix with high tensile strength polyester yarn reinforcement.

**TEMPERATURE:** -13°F (-25°C) to +140°F (+60°C)

**APPLICATION:** HD fish suction and transfer. Also

HD water suction and transfer for rental, construction, trash pumps and moving water at fracking sites.

#### **FEATURES:**

- Clear visual flow
- Higher transfer pressures
- Excellent flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Vacuum up to 29" of Hg

**SAFETY FACTOR: 3:1** 

Part	I.	I.D.		O.D.			( W.P.@ 68°F	Vacuum	Weight		Minimum Bend Radius		Std. Length	
Number	in.	mm	in.	mm	Braids	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)	
3076-0150-100	1-1/2	38.10	2.03	51.56	1	110	7.58	29.0	0.47	0.70	2.50	63.50	100	
3076-0200-100	2	50.80	2.60	66.04	1	100	6.89	29.0	0.69	1.03	4.00	101.60	100	
3076-0250-100	2-1/2	63.50	3.01	76.45	1	100	6.89	29.0	0.74	1.10	5.00	127.00	100	
3076-0300-100	3	76.20	3.70	93.98	1	100	6.89	28.0	1.13	1.68	6.00	152.40	100	
3076-0400-100	4	101.60	4.78	121.41	1	80	5.52	28.0	1.74	2.59	7.00	177.80	100	
3076-0500-100	5	127.00	6.04	153.42	1	80	5.52	28.0	2.99	4.45	9.00	228.60	100	
3076-0600-020	6	152.40	7.17	182.12	1	70	4.83	28.0	3.88	5.77	9.00	228.60	20	
3076-0600-100	6	152.40	7.17	182.12	1	70	4.83	28.0	3.88	5.77	10.00	254.00	100	
3076-0800-020	8	203.20	9.34	237.24	1	60	4.14	28.0	5.55	8.26	16.00	406.40	20	
3076-1000-020	10	254.00	11.63	295.40	1	40	2.76	28.0	8.90	13.24	25.00	635.00	20	
3076-1200-020	12	304.80	13.80	350.52	1	28	1.93	28.0	10.30	15.38	46.00	1168.00	20	

Note: Discharge pressures and vacuum are temperature dependent.

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

All sizes may not be stocked in all locations. Check with customer service for availability. We disclaim any liability for use of our products in applications other than which they are designed.

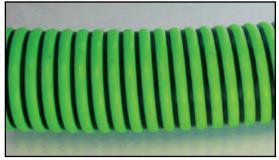




### 3080

### **NBR/PVC SUCTION HOSE**







CONSTRUCTION: NBR/PVC tube with polyethylene

clockwise helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Septic, waste water and liquid manure

handling; agricultural liquid fertilizers and standard duty water suction, as well as suction and transfer for rental, construction and trash pumps.

### **FEATURES:**

- -40°F cold weather resistance
- Sub-zero flexibility
- Clockwise polyethylene helix
- Vacuum up to 29" of Hg.

**SAFETY FACTOR: 3:1** 

Part	I	.D.	0.	.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
3080-0150-100	1-1/2	38.10	1.85	46.99	PE Helix	50	3.45	29.0	0.41	0.61	3.80	96.50	100
3080-0200-100	2	50.80	2.43	61.72	PE Helix	50	3.45	29.0	0.67	1.00	5.50	139.70	100
3080-0300-100	3	76.20	3.52	89.41	PE Helix	45	3.10	29.0	1.10	1.64	7.50	190.50	100
3080-0400-100	4	101.60	4.60	116.84	PE Helix	38	2.62	29.0	1.84	2.74	11.50	292.10	100
3080-0600-100	6	152.40	6.81	172.97	PE Helix	23	1.59	28.0	3.23	4.81	20.00	508.00	100



#### 3074 **HD SUB-ZERO COLD WEATHER CLEAR PVC SUCTION HOSE**







**CONSTRUCTION:** PVC tube with sturdy clockwise

PVC helix.

**TEMPERATURE:** -40°F (-40°C) to +140°F (+60°C)

**APPLICATION:** Heavy duty water suction and transfer

for rental, construction and trash pumps

in sub-zero weather conditions.

#### **FEATURES:**

- Clear visual flow
- -40°F cold weather resistance
- Sub-zero flexibility
- Easy to drag with "Go-Glide" external clockwise PVC helix
- Vacuum up to 29" of Hg

**SAFETY FACTOR: 3:1** 

Part Number		.D.	0.	D.	Reinf.	1	x W.P. 68°F	Vacuum @ 68°F	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
3074-0100-100	1	25.40	1.22	30.99	PVC Helix	43	2.97	29.0	0.15	0.22	2.00	50.80	100
3074-0125-100	1-1/4	31.75	1.48	37.59	PVC Helix	36	2.48	29.0	0.18	0.27	2.50	63.50	100
3076-0150-100	1-1/2	38.10	1.82	46.23	PVC Helix	36	2.48	29.0	0.28	0.42	2.50	63.50	100
3076-0200-100	2	50.80	2.35	59.69	PVC Helix	36	2.48	29.0	0.44	0.65	3.00	76.20	100
3076-0250-100	2-1/2	63.50	2.87	72.90	PVC Helix	28	1.93	29.0	0.60	0.89	5.00	127.00	100
3076-0300-100	3	76.20	3.50	88.90	PVC Helix	28	1.93	29.0	0.85	1.26	6.00	152.40	100
3076-0400-100	4	101.60	4.63	117.60	PVC Helix	21	1.45	29.0	1.34	1.99	9.00	228.60	100
3076-0500-100	5	127.00	5.63	143.00	PVC Helix	21	1.45	28.0	2.20	3.27	10.00	254.00	100
3076-0600-100	6	152.40	6.73	170.94	PVC Helix	21	1.45	28.0	2.72	4.05	11.00	279.40	100
3076-0800-020	8	203.20	9.04	229.62	PVC Helix	21	1.45	28.0	4.84	7.20	16.00	406.40	20
3076-1000-020	10	254.00	11.18	283.97	PVC Helix	14	0.97	28.0	7.06	10.51	30.00	762.00	20
3076-1200-020	12	304.80	13.30	337.82	PVC Helix	14	0.97	26.0	9.74	14.49	40.00	1016.00	20

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

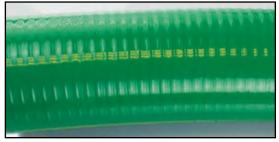
All sizes may not be stocked in all locations. Check with customer service for availability.



### 4601

### **GREEN PVC WATER SUCTION HOSE**







CONSTRUCTION: Tube is PVC, smooth, green. Cover

is also PVC, smooth to lightly corrugated. Reinforcement is a

PVC helix.

**TEMPERATURE:** -14°F (-26°C) to +150°F (+66°C)

**BRANDING:** None.

**APPLICATION:** Suction, discharge or gravity flow of

water, salt water and oily water in construction, agriculture, mining or

equipment rental.

#### **FEATURES:**

- Cover is weather, ozone and UV resistant
- Lightweight and flexible

#### **SAFETY FACTOR: 3:1**

Part	ı	.D.	0.	D.	Reinf.		k W.P. 68°F	Vacuum	We	ight		mum Radius	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	(ft.)
4601-0750	3/4	19.05	0.95	24.13	PVC Helix	100	6.89	28.0	0.16	0.24	2.00	50.80	100
4601-1000	1	25.40	1.22	30.99	PVC Helix	100	6.89	28.0	0.20	0.30	5.00	127.00	100
4601-1250	1-1/4	31.75	1.41	35.81	PVC Helix	100	6.89	28.0	0.26	0.39	6.00	152.40	100
4601-1500	1-1/2	38.10	1.77	44.96	PVC Helix	100	6.89	28.0	0.35	0.52	7.00	177.80	100
4601-2000	2	50.80	2.32	58.93	PVC Helix	100	6.89	28.0	0.54	0.80	9.00	228.60	100
4601-2500	2-1/2	63.50	2.87	72.90	PVC Helix	80	5.52	26.0	0.70	1.04	11.00	279.40	100
4601-3000	3	76.20	3.35	85.09	PVC Helix	75	5.17	26.0	0.93	1.38	14.00	355.60	100
4601-4000	4	101.60	4.49	114.05	PVC Helix	60	4.14	26.0	1.48	2.20	18.00	457.20	100
4601-6050	6	152.50	6.46	164.08	PVC Helix	50	3.45	26.0	2.89	4.30	31.00	787.40	50



### 4615

### **CLEAR/WHITE HELIX PVC WATER SUCTION HOSE**







**CONSTRUCTION:** Tube is PVC, smooth, clear. Cover

is also PVC, smooth to lightly corrugated. Reinforcement is a

PVC helix.

**TEMPERATURE:** -14°F (-26°C) to +150°F (+66°C)

**BRANDING:** None.

**SAFETY FACTOR: 3:1** 

**APPLICATION:** Suction, discharge or gravity flow of

water, salt water and oily water in construction, agriculture, mining or

equipment rental.

### **FEATURES:**

- Cover is weather, ozone and UV resistant
- Lightweight and flexible
- Allows for visual flow inspection

Part	I.	.D.	o	.D.	Reinf.		x W.P. 68°F	Vacuum	We	ight		imum Radius	Std. Length
Number	inch	mm	inch	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	inch	mm	(ft.)
4615-0750	3/4	19.05	0.95	24.13	PVC Helix	100	6.89	28.0	0.16	0.24	2.00	50.80	100
4615-1000	1	25.40	1.22	30.99	PVC Helix	100	6.89	28.0	0.20	0.30	5.00	127.00	100
4615-1250	1-1/4	31.75	1.41	35.81	PVC Helix	100	6.89	28.0	0.26	0.39	6.00	152.40	100
4615-1500	1-1/2	38.10	1.77	44.96	PVC Helix	100	6.89	28.0	0.35	0.52	7.00	177.80	100
4615-2000	2	50.80	2.32	58.93	PVC Helix	100	6.89	28.0	0.54	0.80	9.00	228.60	100
4615-2500	2-1/2	63.50	2.87	72.90	PVC Helix	80	5.52	26.0	0.70	1.04	11.00	279.40	100
4615-3000	3	76.20	3.35	85.09	PVC Helix	75	5.17	26.0	0.93	1.38	14.00	355.60	100
4615-4000	4	101.60	4.49	114.05	PVC Helix	60	4.14	26.0	1.48	2.20	18.00	457.20	100
4615-6050	6	152.50	6.46	164.08	PVC Helix	50	3.45	26.0	2.89	4.30	31.00	787.40	50



### 4450

### **RUBBER WATER SUCTION HOSE**







**CONSTRUCTION:** Tube is EPDM blend, smooth and black.

Cover is also a EPDM blend with a fabric impression. Reinforcement is either a two-ply or four-ply synthetic fabric with a

double wire helix.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4450 WATER SUCTION

Yellow mylar longitudinal stripe.

**SAFETY FACTOR:** 3:1

**APPLICATION:** For suction, discharge or gravity flow of water in construction, mining, oil exploration, agriculture and equipment rental.

### **FEATURES:**

- Resistant to water-based ag fertilizers
- Resistant to salt water
- Cover is abrasion and weather resistant
- Flexible and economical

Part Number	ı	.D.	0.	.D.	Reinf.		x W.P. 68°F	Vacuum @ 68°F	We	ight	1	imum Radius	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	@ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4450-0100-100	1	25.40	1.42	36.00	2	150	10.35	28.0	0.50	0.75	3.75	95.00	100
4450-0125-100	1-1/4	31.75	1.70	43.18	2	150	10.35	28.0	0.75	1.12	6.00	152.40	100
4450-0150-100	1-1/2	38.10	1.96	49.78	2	150	10.35	28.0	0.80	1.19	6.50	165.10	100
4450-0200-100	2	50.80	2.49	63.25	2	150	10.35	28.0	1.11	1.65	8.00	203.20	100
4450-0200-200	2	50.80	2.49	63.25	2	150	10.35	28.0	1.11	1.65	8.00	203.20	200
4450-0250-100	2-1/2	63.50	2.99	75.95	2	150	10.35	28.0	1.75	2.60	10.00	254.00	100
4450-0300-100	3	76.20	3.50	88.90	2	150	10.35	28.0	2.24	3.33	12.00	304.80	100
4450-0300-200	3	76.20	3.50	88.90	2	150	10.35	28.0	2.24	3.33	12.00	304.80	200
4450-0400-100	4	101.60	4.53	115.06	2	150	10.35	28.0	2.79	4.15	18.00	457.20	100
4450-0400-200	4	101.60	4.53	115.06	2	150	10.35	28.0	2.79	4.15	18.00	457.20	200
4450-0500-100	5	127.00	5.68	144.27	2	150	10.35	28.0	3.25	4.84	26.00	660.40	100
4450-0600-020	6	152.40	6.54	166.12	2	150	10.35	28.0	5.75	8.56	31.00	787.40	20
4450-0600-050	6	152.40	6.54	166.12	2	150	10.35	28.0	5.75	8.56	31.00	787.40	50
4450-0600-100	6	152.40	6.54	166.12	2	150	10.35	28.0	5.75	8.56	31.00	787.40	100
4450-0800-020	8	203.20	8.79	223.27	4	100	6.89	28.0	6.59	9.81	42.00	1066.80	20
4450-1000-020	10	254.00	10.91	277.11	4	75	5.17	28.0	10.25	15.25	50.00	1270.00	20
4450-1200-020	12	340.80	12.91	327.91	4	75	5.17	25.0	13.50	20.09	60.00	1524.00	20



### 4449

### **FRAC WATER SUCTION HOSE**







CONSTRUCTION: Tube and cover are an EPDM/SBR

blend, smooth and black. Reinforcement is a two-ply synthetic fabric with a wire helix.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4449 FRAC WATER SUCTION

WP 75 PSI 5.18 BAR.

Red mylar longitudinal stripe.

**APPLICATION:** For suction, recycling or disposal of flowback water.

### **FEATURES:**

- EPDM blend cover makes it resistant to heat, weather and abrasion
- Lighter than standard water suction hose and more flexible
- Economical

**SAFETY FACTOR: 3:1** 

Part		I.D.	0.	.D.	Reinf.	1	x W.P. 68°F	Vacuum	We	ight		imum Radius	Std.
Number	in.	mm	in.	mm	Plies	PSI	BAR	@ 68°F	lb./ft.	KG/m	in.	mm	Length (ft.)
4449-0200-100	2	50.80	2.40	60.96	2	75	5.18	29.0	0.97	1.44	8.00	203.20	100
4449-0300-100	3	76.20	3.39	88.90	2	75	5.18	29.0	1.52	2.26	12.00	304.80	100
4449-0400-100	4	101.60	4.41	112.01	2	75	5.18	29.0	2.12	3.15	18.00	457.20	100
4449-0600-100	6	152.40	6.57	167.00	2	75	5.18	29.0	4.68	6.98	31.00	787.40	100



### 4352

### **RUBBER 2-PLY WATER DISCHARGE HOSE**







**CONSTRUCTION:** Tube and cover are SBR, black.

Reinforcement is a two-ply

synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4352 I.D. WATER DISCHARGE

WP PSI BAR.

Yellow mylar longitudinal stripe.

**APPLICATION:** For general construction, mines and water discharge and equipment rental.

#### **FEATURES:**

- Cover compound makes it resistant to weather and ozone
- Lays flat and rolls up for easy storage
- Ideal for standard working pressure

**SAFETY FACTOR:** 3:1

Part Number		.D.	0.	D.	Reinf. Plies	-	x W.P. 68°F	Vacuum @ 68°F	We	ight	1	imum Radius	Std. Length
Number	in.	mm	in.	mm	Files	PSI	BAR	₩ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4352-0150-100	1-1/2	38.10	1.81	45.97	2	150	10.35	n/a	0.60	0.89	15.00	380.00	100
4352-0200-100	2	50.80	2.31	58.67	2	150	10.35	n/a	0.84	1.25	20.00	508.00	100
4352-0250-100	2-1/2	63.50	2.75	69.85	2	150	10.35	n/a	0.91	1.35	25.00	635.00	100
4352-0300-100	3	76.20	3.38	85.85	2	150	10.35	n/a	1.12	1.67	30.00	762.00	100
4352-0400-100	4	101.60	4.37	111.00	2	150	10.35	n/a	1.25	1.86	40.00	1016.00	100
4352-0500-100	5	127.00	5.51	139.95	2	150	10.35	n/a	2.29	3.41	50.00	1270.00	100
4352-0600-050	6	152.40	6.50	165.10	2	150	10.35	n/a	3.45	5.13	60.00	1524.00	50
4352-0600-100	6	152.40	6.50	165.10	2	150	10.35	n/a	3.45	5.13	60.00	1524.00	100
4352-0800-050	8	203.20	8.50	215.90	2	100	6.89	n/a	4.30	6.40	80.00	2030.00	50
4352-1000-050	10	254.00	10.50	266.70	2	100	6.89	n/a	5.40	8.04	100.00	2450.00	50
4352-1200-050	12	304.80	12.50	317.50	2	100	6.89	n/a	6.75	10.04	120.00	3058.00	50

Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

All sizes may not be stocked in all locations. Check with customer service for availability.

We disclaim any liability for use of our products in applications other than which they are designed.

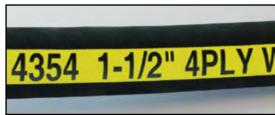




### 4354

### **RUBBER 4-PLY WATER DISCHARGE HOSE**







**CONSTRUCTION:** Tube and cover are SBR, black.

Reinforcement is a four-ply

synthetic fabric.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Jason logo 4354 I.D. WATER DISCHARGE

WP PSI BAR.

Yellow mylar longitudinal stripe.

**APPLICATION:** For water discharge in construction,

mines & quarries. Also for heavy duty

equipment rental.

#### **FEATURES:**

- Cover compound makes it resistant to weather and ozone
- Lays flat and rolls up for easy storage
- Ideal for high working pressure water discharge applications
- Excellent for tough, rugged operating conditions

**SAFETY FACTOR:** 3:1

Part Number	ı	.D.	0.	D.	Reinf. Plies	1	x W.P. 68°F	Vacuum @ 68°F	We	ight		imum Radius	Std. Length
Number	in.	mm	in.	mm	Files	PSI	BAR	₩ 00 F	lb./ft.	KG/m	in.	mm	(ft.)
4354-0150-100	1-1/2	38.10	2.00	50.80	4	250	17.24	n/a	0.83	1.24	15.00	380.00	100
4354-0200-100	2	50.80	2.56	65.02	4	250	17.24	n/a	1.11	1.65	20.00	508.00	100
4354-0250-100	2-1/2	63.50	3.07	77.98	4	250	17.24	n/a	1.24	1.85	25.00	635.00	100
4354-0300-100	3	76.20	3.58	90.93	4	225	15.51	n/a	1.50	2.23	30.00	762.00	100
4354-0400-050	4	101.60	4.61	117.09	4	200	13.79	n/a	1.85	2.75	40.00	1016.00	50
4354-0400-100	4	101.60	4.61	117.09	4	200	13.79	n/a	1.85	2.75	40.00	1016.00	100
4354-0600-100	6	152.40	6.57	166.88	4	150	10.35	n/a	3.90	5.80	60.00	1524.00	100
4354-0800-050	8	203.20	8.66	219.96	4	125	8.62	n/a	5.25	7.81	80.00	2030.00	50
4354-1000-050	10	254.0	10.66	270.76	4	125	8.62	n/a	6.29	9.36	100.00	2540.00	50
4354-1200-050	12	304.80	12.68	322.07	4	125	8.62	n/a	7.09	10.54	120.00	3048.00	50
4354-1400-050	14	355.60	14.61	371.00	4	100	6.89	n/a	7.62	11.32	120.00	3048.00	50



### 4380

### **NON-CONDUCTIVE FURNACE DOOR HOSE**







CONSTRUCTION: Tube is EPDM, white, smooth and

non-conductive. Cover is a glass fiber ply impregnated with heat and flame-resistant synthetic rubber. Reinforcement is a two-ply

synthetic fabric.

**TEMPERATURE:** -40°F (-40°C) to +266°F (+130°C)

Cover to +575°F (+302°C)

**BRANDING:** None

**APPLICATION:** Conveys cooling water to furnace doors in steel mills, glass plants and similar operations.

#### **FEATURES:**

- Superior heat resistant cover resists heat up to +575°F
- Resists heat, open flame and splashes of white hot metal to +575°F (+302°C)
- EPDM tube is non-conductive

**SAFETY FACTOR:** 3:1

Part Number	I,	.D.	O.D.		Reinf.		x W.P. 68°F	Vacuum @ 68°F	Weight		Minimum Bend Radius		Std. Length
Number	inch	mm	inch	mm	Files	PSI	BAR	@ 00 F	lb./ft.	KG/m	inch	mm	(ft.)
4380-0050-100	1/2	12.70	0.91	23.11	2	150	10.35	n/a	0.20	0.30	5.00	127.00	100
4380-0075-100	3/4	19.05	1.19	30.23	2	150	10.35	n/a	0.30	0.45	7.50	190.00	100
4380-0100-100	1	25.40	1.38	35.05	2	150	10.35	n/a	0.50	0.74	10.00	254.00	100
4380-0125-100	1-1/4	31.75	1.75	44.45	2	150	10.35	n/a	0.90	1.34	12.60	320.00	100
4380-0150-100	1-1/2	38.10	2.00	50.80	2	150	10.35	n/a	1.00	1.49	15.00	380.00	100
4380-0200-100	2	50.80	2.53	64.26	2	150	10.35	n/a	1.10	1.64	20.00	508.00	100



### 5823

### MAINSTREAM™ PRESSURE WASHER ASSEMBLIES







**CONSTRUCTION:** Tube and cover are made of special

synthetic rubber. Reinforcement is a

one wire braid.

**TEMPERATURE:** -40°F (-40°C) to +212°F (+100°C)

**BRANDING:** Jason logo 3/8 MAINSTREAM™ Pressure

Washer - 3000 PSI MAX WP.

**NOT FOR STEAM SERVICE** 

**APPLICATION:** Used in clean-up applications for

poultry plants, dairies, off road equipment, paper mills, construction, homes and patios to name a few.

#### **FEATURES:**

- Cover is oil, weather and abrasion resistant
- Handles working pressures up to 3000 lbs
- Can be used with hot or cold water and mild detergents
- Ergonomic bend restrictors are included in each assembly
- Available in the popular 50' and 75' lengths

**SAFETY FACTOR: 3:1** 

Part	I.D. x Length	Coupling	Reinf. Braids		W.P. 8°F	Weight per Length		
Number			Braids	PSI	BAR	lbs.	KG	
5823-06-050	3/8" x 50' 9.5 mm x 15.2 m	3/8" MNPT x 3/8" MSPT w/Ergonomic Bend Restrictor Each End	1	3000	206.70	10.02	4.54	
5823-06-075	3/8" x 75' 9.5 mm x 22.9 m	3/8" MNPT x 3/8" MSPT w/Ergonomic Bend Restrictor Each End	1	3000	206.70	15.48	7.02	
5823-06-100	3/8" x 100' 9.5 mm x 30.48 m	3/8" MNPT x 3/8" MSPT w/Ergonomic Bend Restrictor Each End	1	3000	206.70	20.04	9.08	

Note: **DO NOT** USE FOR **ANY** STEAM APPLICATIONS



#### 4502 **BLUE PVC WATER DISCHARGE BULK HOSE & ASSEMBLIES**











**CONSTRUCTION:** Tube and cover are blue PVC.

Reinforcement is knitted

polyester yarn.

**TEMPERATURE:** -14°F (-26°C) to +150°F (+66°C)

BRANDING: Jason logo WP XX (PSI) ID.

**APPLICATION:** For general purpose water discharge

in construction, agriculture and drip

irrigation.

**SAFETY FACTOR: 3:1** 

### **FEATURES:**

- Light and easy to handle
- Rolls flat for convenient storage
- Homogeneous construction eliminates tube and cover separation
- Maximum bonding as tube and cover are extruded simultaneously

### **BULK HOSE**

Part Number	I.	.D.		all mess	Reinf.		W.P. 68°F	Vacuum @ 68°F	We	ight	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 00 1	lb./ft.	KG/m	(ft.)
4502-1000	1	25.40	0.056	1.42	Knitted	85	5.86	n/a	0.10	0.15	300
4502-1500	1-1/2	38.10	0.056	1.42	Knitted	85	5.86	n/a	0.21	0.31	300
4502-1500-050	1-1/2	38.10	0.056	1.42	Knitted	85	5.86	n/a	0.21	0.31	50
4502-2000	2	50.80	0.056	1.42	Knitted	85	5.86	n/a	0.25	0.37	300
4502-2000-050	2	50.80	0.056	1.42	Knitted	85	5.86	n/a	0.25	0.37	50
4502-2500	2-1/2	63.50	0.060	1.52	Knitted	75	5.17	n/a	0.29	0.43	300
4502-3000	3	76.20	0.062	1.57	Knitted	70	4.83	n/a	0.39	0.58	300
4502-3000-050	3	76.20	0.062	1.57	Knitted	70	4.83	n/a	0.39	0.58	50
4502-4000	4	101.60	0.062	1.57	Knitted	70	4.83	n/a	0.60	0.89	300
4502-6000	6	152.40	0.077	1.96	Knitted	50	3.45	n/a	1.15	1.71	300
4502-8000	8	203.20	0.089	2.26	Knitted	45	3.10	n/a	1.20	1.79	300

### **HOSE ASSEMBLIES - CUT • COUPLED • COILED • TIED**

Part Number	I.	D.	Length	Coupling	Reinf.		W.P. 8°F	Wei	ght
Number	in.	mm	(ft.)			PSI	BAR	lb./ft.	KG/m
4502-1500-050AB	1-1/2 38.10 50		50	1-1/2" I.D. AB Pin Lug (M x F)	Knitted	85	5.86	9.00	13.30
4502-2000-050AB	2 50.80 50		50	2" I.D. AB Pin Lug (M x F)	Knitted	85	5.86	12.00	17.80
4502-3000-050AB	3	76.20	50	3" I.D. AB Pin Lug (M x F)	Knitted	70	4.83	22.00	32.60
4502-1500-050CE	1-1/2	38.10	50	1-1/2" I.D. Aluminum Cam Lock (C x E)	Knitted	85	5.86	9.00	13.30
4502-2000-050CE	2	50.80	50	2" I.D. Aluminum Cam Lock (C x E)	Knitted	85	5.86	12.00	17.80
4502-3000-050CE	3	76.20	50	3" I.D. Aluminum Cam Lock (C x E)	Knitted	70	4.83	22.00	32.60

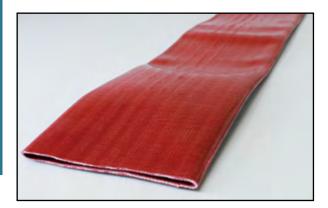
Working pressure (W.P.) is temperature dependent. See the General Information section Table II - Pressure Re-Rating for increased Temperatures (Page 10) for more information.

All sizes may not be stocked in all locations. Check with customer service for availability. e disclaim any liability for use of our products in applications other than which they are designed.





### 4504 WINE RED PVC WATER DISCHARGE HOSE & ASSEMBLIES



**CONSTRUCTION:** Tube and cover are wine red PVC.

Reinforcement is knitted

polyester yarn.

**TEMPERATURE:** -14°F (-26°C) to +150°F (+66°C)

**BRANDING:** Jason logo WP XX (PSI) ID.

**APPLICATION:** For general purpose water discharge

in construction, agriculture and drip

irrigation.

**SAFETY FACTOR: 3:1** 









### **FEATURES:**

- Medium duty hose
- Rolls flat for convenient storage
- Homogeneous construction eliminates tube and cover separation
- Maximum bonding as tube and cover is extruded simultaneously

#### **BULK HOSE**

Part Number	I.	.D.	Wall Thickness		Reinf.	Max W.P. @ 68°F		Vacuum @ 68°F	We	ight	Std. Length
Number	inch	mm	inch	mm		PSI	BAR	@ 00 1	lb./ft.	KG/m	(ft.)
4504-1500	1-1/2	38.10	0.076	1.93	Knitted	115	7.93	n/a	0.21	0.31	300
4504-2000	2	50.80	0.076	1.93	Knitted	115	7.93	n/a	0.25	0.37	300
4504-2500	2-1/2	63.50	0.079	2.01	Knitted	115	7.93	n/a	0.29	0.43	300
4504-3000	3	76.20	0.079	2.01	Knitted	100	6.89	n/a	0.39	0.58	300
4504-4000	4	101.60	0.081	2.06	Knitted	100	6.89	n/a	0.60	0.89	300
4504-6000	6	152.40	0.112	2.84	Knitted	75	5.17	n/a	1.15	1.71	300
4504-8000	8	203.20	0.124	3.15	Knitted	60	4.14	n/a	1.20	1.79	300

### HOSE ASSEMBLIES CUT • COUPLED • COILED • TIED

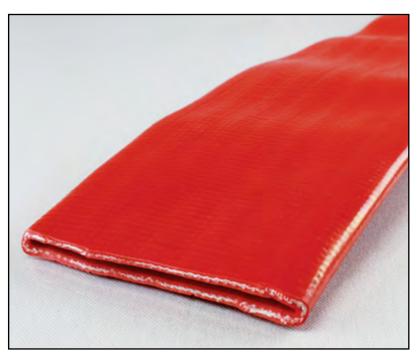
Part	I.	D.	Length	Coupling	Reinf.	Max ' @ 68		Wei	ght
Number	in.	mm	(ft.)			PSI	BAR	lb./ft.	KG/m
4504-2000-050AB	2	50.80	50	2" I.D. AB Pin Lug (M x F)	Knitted	115	7.93	12.00	17.80
4504-3000-050AB	3	76.20	50	3" I.D. AB Pin Lug (M x F)	Knitted	100	6.89	22.00	32.60
4504-2000-050CE	2	50.80	50	2" I.D. Aluminum Cam Lock (C x E)	Knitted	115	7.93	12.00	17.80
4504-3000-050CE	3	76.20	50	3" I.D. Aluminum Cam Lock (C x E)	Knitted	100	6.89	22.00	32.60

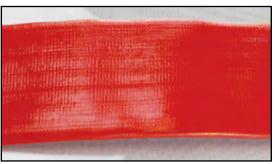


### 4515

### **RED PVC WATER DISCHARGE HOSE**

### **HEAVY DUTY**







**CONSTRUCTION:** Tube and cover are bright red PVC.

Reinforcement is knitted

polyester yarn.

**TEMPERATURE:** -14°F (-26°C) to +150°F (+66°C)

**BRANDING:** None

**APPLICATION:** For water discharge in construction,

agriculture and heavy duty equipment

rental.

### **FEATURES:**

- High WP for heavy duty applications
- Rolls flat for convenient storage
- Homogeneous construction eliminates tube and cover separation

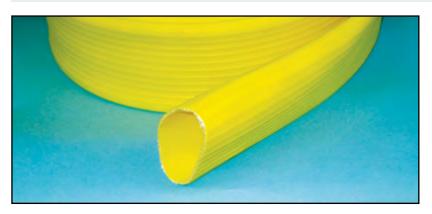
Maximum bonding as tube and cover extruded simultaneously

**SAFETY FACTOR:** 3:1

Part	I.D.		Wall Thickness		Reinf.	Max W.P. @ 68°F		Vacuum	We	ight	Std. Length
Number	in.	mm	in.	mm		PSI	BAR	@ 68°F	lb./ft.	KG/m	(ft.)
4515-1500	1-1/2	38.10	0.090	2.29	Knitted	140	9.65	n/a	0.22	0.32	300
4515-2000	2	50.80	0.090	2.29	Knitted	130	8.96	n/a	0.26	0.38	300
4515-2500	2-1/2	63.50	0.098	2.49	Knitted	125	8.61	n/a	0.30	0.44	300
4515-3000	3	76.20	0.098	2.49	Knitted	125	8.61	n/a	0.40	0.59	300
4515-4000	4	101.60	0.110	2.79	Knitted	125	8.61	n/a	0.62	0.91	300
4515-6000	6	152.40	0.111	2.82	Knitted	115	7.92	n/a	1.18	1.75	300
4515-8000	8	203.20	0.111	2.82	Knitted	70	4.82	n/a	1.23	1.83	300



### 4358 NITRILE/PVC OIL RESISTANT DISCHARGE HOSE - YELLOW





**CONSTRUCTION:** Tube and cover are bright yellow

NBR/PVC.

**TEMPERATURE:** -20°F (-29°C) to +210°F (+99°C)

**BRANDING:** None

**APPLICATION:** For use in industrial washdown, irrigation,

general dewatering, pump discharge and drainage.

**SAFETY FACTOR: 3:1** 

#### **FEATURES:**

- Up to 250 PSI (17.24 BAR) working pressure
- Oil resistant tube and cover
- · Resists heat, cold, ozone and UV light
- Lightweight and flexible

Part Number	I.	D.	Wa Thick		Reinf. Max W Plies Max W			Vacuum @ 68°F	We	ight	Std. Length
Number	inch	mm	inch	mm	Files	PSI	BAR	₩ 00 F	lb./ft.	KG/m	(feet)
4358-0075-050	3/4	19.05	0.110	2.79	n/a	250	17.25	n/a	0.10	0.15	50
4358-0075-100	3/4	19.05	0.110	2.79	n/a	250	17.25	n/a	0.10	0.15	100
4358-0100-050	1	25.40	0.110	2.79	n/a	250	17.25	n/a	0.14	0.21	50
4358-0100-100	1	25.40	0.110	2.79	n/a	250	17.25	n/a	0.14	0.21	100
4358-0150-050	1-1/2	38.10	0.110	2.79	n/a	250	17.25	n/a	0.26	0.39	50
4358-0150-100	1-1/2	38.10	0.110	2.79	n/a	250	17.25	n/a	0.26	0.39	100
4358-0200-050	2	50.80	0.110	2.79	n/a	250	17.25	n/a	0.34	0.51	50
4358-0200-100	2	50.80	0.110	2.79	n/a	250	17.25	n/a	0.34	0.51	100
4358-0250-050	2-1/2	63.50	0.110	2.79	n/a	250	17.25	n/a	0.47	0.70	50
4358-0250-100	2-1/2	63.50	0.110	2.79	n/a	250	17.25	n/a	0.47	0.70	100
4358-0300-050	3	76.20	0.110	2.79	n/a	250	17.25	n/a	0.65	0.97	50
4358-300-100	3	76.20	0.110	2.79	n/a	200	13.79	n/a	0.65	0.97	100
4358-0400-050	4	102.40	0.110	2.79	n/a	200	13.79	n/a	0.83	1.24	50
4358-0400-100	4	102.40	0.110	2.79	n/a	200	10.35	n/a	0.83	1.24	100
4358-0600-050	6	152.40	0.110	2.79	n/a	150	10.35	n/a	1.60	2.39	50
4358-0600-100	6	152.40	0.110	2.79	n/a	150	10.35	n/a	1.60	2.39	100
4358-0800-050	8	204.80	0.110	2.79	n/a	150	10.35	n/a	2.30	3.43	50
4358-0800-100	8	204.80	0.110	2.79	n/a	150	10.35	n/a	2.30	3.43	100
4358-1000-050	10	254.0	0.160	4.06	n/a	150	10.35	n/a	3.20	4.77	50
4358-1000-100	10	254.0	0.160	4.06	n/a	150	10.35	n/a	3.20	4.77	100
4358-1200-050	12	304.80	0.170	4.32	n/a	150	10.35	n/a	3.50	5.22	50
4358-1200-100	12	304.80	0.170	4.32	n/a	150	10.35	n/a	3.50	5.22	100





#### 4359 **NITRILE/PVC OIL RESISTANT DISCHARGE HOSE - BLACK**





**CONSTRUCTION:** Tube and cover are black NBR/PVC. **TEMPERATURE:** -20°F (-29°C) to +210°F (+99°C)

**BRANDING:** None

**APPLICATION:** For use in industrial washdown, irrigation,

general dewatering, pump discharge and drainage.

#### **FEATURES:**

- Up to 250 PSI (17.24 BAR) working pressure
- Oil resistant tube and cover
- · Resists heat, cold, ozone and UV light
- Lightweight and flexible
- 660 ft. lengths available in 4", 6" and 8" IDs

**SAFETY FACTOR: 3:1** 

Part Number	I.	D.		/all kness	Reinf.		W.P. 88°F	Vacuum @ 68°F	We	ight	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	@ 00 F	lb./ft.	KG/m	(ft.)
4359-0075-050	3/4	19.05	0.110	2.79	n/a	250	17.25	n/a	0.10	0.15	50
4359-0075-100	3/4	19.05	0.110	2.79	n/a	250	17.25	n/a	0.10	0.15	100
4359-0100-050	1	25.40	0.110	2.79	n/a	250	17.25	n/a	0.14	0.21	50
4359-0100-100	1	25.40	0.110	2.79	n/a	250	17.25	n/a	0.14	0.21	100
4359-0150-050	1-1/2	38.10	0.110	2.79	n/a	250	17.25	n/a	0.26	0.39	50
4359-0150-100	1-1/2	38.10	0.110	2.79	n/a	250	17.25	n/a	0.26	0.39	100
4359-0200-050	2	50.80	0.110	2.79	n/a	250	17.25	n/a	0.34	0.51	50
4359-0200-100	2	50.80	0.110	2.79	n/a	250	17.25	n/a	0.34	0.51	100
4359-0250-050	2-1/2	63.50	0.110	2.79	n/a	250	17.25	n/a	0.47	0.70	50
4359-0250-100	2-1/2	63.50	0.110	2.79	n/a	250	17.25	n/a	0.47	0.70	100
4359-0300-050	3	76.20	0.110	2.79	n/a	250	17.25	n/a	0.65	0.97	50
4359-0300-100	3	76.20	0.110	2.79	n/a	200	13.79	n/a	0.65	0.97	100
4359-0400-050	4	102.40	0.110	2.79	n/a	200	13.79	n/a	0.83	1.24	50
4359-0400-100	4	102.40	0.110	2.79	n/a	200	13.79	n/a	0.83	1.24	100
4359-0400-660	4	102.40	0.110	2.79	n/a	200	13.79	n/a	0.83	1.24	660
4359-0600-050	6	152.40	0.110	2.79	n/a	150	10.35	n/a	1.60	2.39	50
4359-0600-100	6	152.40	0.110	2.79	n/a	150	10.35	n/a	1.60	2.39	100
4359-0600-660	6	152.40	0.110	2.79	n/a	150	10.35	n/a	1.60	2.39	660
4359-0800-050	8	204.80	0.110	2.79	n/a	150	10.35	n/a	2.30	3.43	50
4359-0800-100	8	204.80	0.110	2.79	n/a	150	10.35	n/a	2.30	3.43	100
4359-0800-660	8	204.80	0.110	2.79	n/a	150	10.35	n/a	2.30	3.43	660
4359-1000-050	10	254.0	0.160	4.06	n/a	150	10.35	n/a	3.20	4.77	50
4359-1000-100	10	254.0	0.160	4.06	n/a	150	10.35	n/a	3.20	4.77	100
4359-1200-050	12	304.80	0.170	4.32	n/a	150	10.35	n/a	3.50	5.22	50
4359-1200-100	12	304.80	0.170	4.32	n/a	150	10.35	n/a	3.50	5.22	100



### 4703 HEAVY DUTY DJ MILL DISCHARGE HOSE & ASSEMBLIES







**CONSTRUCTION:** Tube is SBR, smooth and black.

The cover is a double jacket made

with 100% polyester.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** Service Pressure 300 PSI.

**APPLICATION:** Municipal washdown or hydrant-to-truck

water supply line. Heavy duty equipment/pump rental, ship/deck washdown.

#### **FEATURES:**

- Double cover gives heavy duty abrasion resistance
- Rolls flat for easy storage
- · Economical, lightweight and flexible

• Double cover increases service pressure rating

### **BULK HOSE**

Part Number	I.	D.	Couplir	ng Bowl	Reinf. Plies		vice ssure	_	st sure	Vacuum @ 68°F	We	ight	Std. Length
Number	in.	mm	in.	mm	Piles	PSI	BAR	PSI	BAR	@ 00 F	lb./ft.	KG/m	(ft.)
4703-1500	1-1/2	38.10	1.94	46.04	n/a	300	20.68	600	41.36	600	0.26	0.39	50
4703-2000	2	50.80	2.50	58.74	n/a	300	20.68	600	41.36	600	0.33	0.49	50
4703-2500	2-1/2	63.50	2.81	71.44	n/a	300	20.68	600	41.36	600	0.45	0.67	50
4703-1501	1-1/2	38.10	1.94	46.04	n/a	300	20.68	600	41.36	600	0.26	0.39	100
4703-2001	2	50.80	2.50	58.74	n/a	300	20.68	600	41.36	600	0.33	0.49	100
4703-2501	2-1/2	63.50	2.81	71.44	n/a	300	20.68	600	41.36	600	0.45	0.67	100

### HOSE ASSEMBLIES CUT • COUPLED • COILED • TIED

Part	1.1	<b>D.</b>	Reinf.	Thread	We	ight	Std.
Number	in.	mm	Plies	Туре	lb./ft.	KG/m	Length (ft.)
4703-1500-050ERNPS	1-1/2	38.10	n/a	NPS	15.00	22.32	50
4703-1500-050ERNST	1-1/2	38.10	n/a	NST	15.00	22.32	50
4703-2000-050ERNPS	2	50.80	n/a	NPS	20.00	29.76	50
4703-2500-050ERNPS	2-1/2	63.50	n/a	NPS	25.00	37.20	50
4703-2500-050ERNST	2-1/2	63.50	n/a	NST	25.00	37.20	50

Couplings are internally expanded, aluminum, hardcoated NPS or NST Male x Female rocker lug

Note: Assembly is rated at 150 PSI. Service pressure is temperature dependent. See the General Information section Table II - Pressure Re-Rating for Increased Temperatures for more information.



### 4705

### MUNICIPAL GRADE SJ MILL DISCHARGE HOSE & ASSEMBLIES



**CONSTRUCTION:** Tube is SBR, smooth and black.

Cover is a single jacket made

with 100% polyester.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

**BRANDING:** ID SJ MILL WP (PSI) (BAR) **APPLICATION:** For water discharge service

in rental yards, fleet service, municipal wash-down and utility dewatering.









#### **FEATURES:**

- HD synthetic cover gives better abrasion resistance
- Rolls flat for convenient storage
- Economical, lightweight and flexible
- Hose is designed for higher working pressures

### **BULK HOSE**

Part Number	I.	.D.	Couplin	Coupling Bowl			rking ssure		ırst ssure	Vacuum @ 68°F	We	ight	Std. Length
Nulliber	inch	mm	inch	mm	Plies	PSI	BAR	PSI	BAR	₩ 00 F	lb./ft.	KG/m	(feet)
4705-0150-050	1-1/2	38.10	1.81	46.04	n/a	230	15.86	345	23.79	n/a	0.23	0.34	50
4705-0150-100	1-1/2	38.10	1.81	46.04	n/a	230	15.86	345	23.79	n/a	0.23	0.34	100
4705-0200-050	2	50.80	2.31	58.74	n/a	230	15.86	345	23.79	n/a	0.28	0.42	50
4705-0200-100	2	50.80	2.31	58.74	n/a	230	15.86	345	23.79	n/a	0.28	0.42	100
4705-0250-050	2-1/2	63.50	2.81	71.44	n/a	200	13.79	300	20.68	n/a	0.39	0.58	50
4705-0250-100	2-1/2	63.50	2.81	71.44	n/a	200	13.79	300	20.68	n/a	0.39	0.58	100
4705-0300-050	3	76.20	3.38	85.73	n/a	200	13.79	300	20.68	n/a	0.50	0.74	50
4705-0300-100	3	76.20	3.38	85.73	n/a	200	13.79	300	20.68	n/a	0.50	0.74	100
4705-0400-050	4	101.60	4.38	111.13	n/a	200	13.79	300	20.68	n/a	0.66	0.98	50
4705-0400-100	4	101.60	4.38	111.13	n/a	200	13.79	300	20.68	n/a	0.66	0.98	100
4705-0600-050	6	152.40	6.38	161.93	n/a	200	13.79	300	20.68	n/a	1.00	1.49	50

### **HOSE ASSEMBLIES - CUT • COUPLED • COILED • TIED**

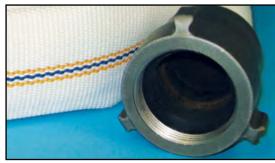
Part	I.D.		Std.		Max W.P.		Weight		Assembly
Number	in.	mm	Length (ft.)	Description		BAR	lb./ft.	KG/m	Pressure Rating (PSI)
4705-0150-050AB	1-1/2	38.10	50	CPLD M x F AB Pin Lug w/5/8" Bands	230	15.86	8.00	11.90	150
4705-0200-050AB	2	50.80	50	CPLD M x F AB Pin Lug w/5/8" Bands	230	15.86	12.00	17.80	150
4705-0300-050AB	3	76.20	50	CPLD M x F AB Pin Lug w/5/8" Bands	200	13.79	22.00	32.80	150
4705-0150-050CE	1-1/2	38.10	50	CPLD M x F 1-1/2" AL Cam Lock (C x E)	230	15.86	8.00	11.90	150
4705-0200-050CE	2	50.80	50	CPLD M x F 2" AL Cam Lock (C x E)	230	15.86	12.00	17.80	150
4705-0300-050CE	3	76.20	50	CPLD M x F 3" AL Cam Lock (C x E)	200	13.79	22.00	32.80	150



### 4735

### **MSHA FIRE HOSE ASSEMBLIES**







CONSTRUCTION: Chloroprene (CR) tube with a

cover that is polyester.

**TEMPERATURE:** -25°F (-32°C) to +185°F (+85°C)

BRANDING: Jason logo 300 PSI Test,

MSHA #18-FHA08001.

**APPLICATION:** Underground mining fire hose.

#### **FEATURES:**

- Meets MSHA rating 18-FHA08001, therefore resistant to fire
- Rolls flat for easy storage
- Couplings are anodized aluminum M x F expansion ring with rocker lugs
- 100% polyester jacket, free from defects, twists, knots and irregularities

**SAFETY FACTOR: 3:1** 

Part	I.D.		Coupling	Reinf.	Service Pressure		Test Pressure		Vacuum	Weight		Standard Lengths
Number	in.	mm	Description	Plies	PSI	BAR	PSI	BAR	@ 68°F	lb./ft.	KG/m	(ft.)
4735-0150-050ERNPS	1-1/2	38.10	NPS EXP Ring	n/a	300	20.68	900	62.04	n/a	0.23	0.34	50
4735-0150-050ERNST	1-1/2	38.10	NST EXP Ring	n/a	300	20.68	900	62.04	n/a	0.23	0.34	50
4735-0150-100ERNPS	1-1/2	38.10	NPS EXP Ring	n/a	300	20.68	900	62.04	n/a	0.23	0.34	100
4735-0150-100ERNST	1-1/2	38.10	NST EXP Ring	n/a	300	20.68	900	62.04	n/a	0.23	0.34	100

# SKIRTBOARD RUBBER



# FOR USE ON CONVEYORS, SNOW PLOW BLADES & CHUTE LINING

SERIES		PAGE
6340	SBR Skirtboard Rubber - Beveled Edge	108
6341	SBR Skirtboard Rubber - Square Edge	109

Product is constantly being upgraded. Jason Industrial reserves the right to make changes in construction without prior notice.

We disclaim any liability for use of our products in applications other than which they are designed.



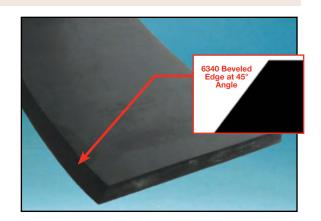


# **SKIRTBOARD RUBBER**

### 6340

### SBR SKIRTBOARD RUBBER - BEVELED EDGE

- **Abrasion and Weather Resistant**
- 55-60 Durometer
- 1,000 PSI Tensile Strength, 300% Elongation
- Cut Widths (Not Extruded)
- Use with conveyor belt for fine material
- Temperature Range: -20°F (-29°C) to +180°F (+83°C)



Part Number	Ga	nuge	V	Vidth	Roll I	_ength	Weight 50 foot length (lbs)	
	inch	mm	inch	mm	feet	meter		
6340-1204	3/8	9.53	4	101.60	50	15.24	46	
6340-1205	3/8	9.53	5	127.00	50	15.24	58	
6340-1206	3/8	9.53	6	152.40	50	15.24	73	
6340-1208	3/8	9.53	8	203.20	50	15.24	82	
6340-1604	1/2	12.70	4	101.60	50	15.24	60	
6340-1605	1/2	12.70	5	127.00	50	15.24	75	
6340-1606	1/2	12.70	6	152.40	50	15.24	97	
6340-1608	1/2	12.70	8	203.20	50	15.24	109	
6340-1610	1/2	12.70	10	254.00	50	15.24	150	





# **SKIRTBOARD RUBBER**



### 6341

### **SBR SKIRTBOARD RUBBER - SQUARE EDGE**

- Abrasion and Weather Resistant
- 55-60 Durometer
- 1,000 PSI Tensile Strength, 300% Elongation
- Cut Widths (Not Extruded)
- Use with conveyor belt or as chute lining
- Temperature Range: -20°F (-29°C) to +180°F (+83°C)



	Gau	ıge	W	idth	Roll	Length	Weight
Part Number	inch	mm	inch	mm	feet	meter	50 foot length (lbs)
6341-0802	1/4	6.35	2	50.80	50	15.24	16
6341-0803	1/4	6.35	3	76.20	50	15.24	24
6341-0804	1/4	6.35	4	101.60	50	15.24	31
6341-0805	1/4	6.35	5	127.00	50	15.24	38
6341-0806	1/4	6.35	6	152.40	50	15.24	47
6341-0807	1/4	6.35	7	177.80	50	15.24	56
6341-0808	1/4	6.35	8	203.20	50	15.24	65
6341-0810	1/4	6.35	10	254.00	50	15.24	78
6341-0812	1/4	6.35	12	304.80	50	15.24	97
6341-0848	1/4	6.35	18	1219.20	50	15.24	390
6341-1202	3/8	9.53	2	50.80	50	15.24	21
6341-1203	3/8	9.53	3	76.20	50	15.24	32
6341-1204	3/8	9.53	4	101.60	50	15.24	42
6341-1205	3/8	9.53	5	127.00	50	15.24	53
6341-1206	3/8	9.53	6	152.40	50	15.24	63
6341-1207	3/8	9.53	7	177.80	50	15.24	76
6341-1208	3/8	9.53	8	203.20	50	15.24	90
6341-1210	3/8	9.53	10	254.00	50	15.24	108
6341-1212	3/8	9.53	12	304.80	50	15.24	128
6341-1248	3/8	9.53	18	1219.20	50	15.24	520
6341-1602	1/2	12.70	2	50.80	50	15.24	30
6341-1603	1/2	12.70	3	76.20	50	15.24	45
6341-1604	1/2	12.70	4	101.60	50	15.24	60
6341-1605	1/2	12.70	5	127.00	50	15.24	74
6341-1606	1/2	12.70	6	152.40	50	15.24	89
6341-1607	1/2	12.70	7	177.80	50	15.24	104
6341-1608	1/2	12.70	8	203.20	50	15.24	121
6341-1610	1/2	12.70	10	254.00	50	15.24	150
6341-1612	1/2	12.70	12	304.80	50	15.24	181
6341-1648	1/2	12.70	18	1219.20	50	15.24	726

	Gau	ıge	Width		Roll Length		Weight
Part Number	inch	mm	inch	mm	feet	meter	50 foot length (lbs)
6341-2402	3/4	19.05	2	50.80	50	15.24	60
6341-2403	3/4	19.05	3	76.20	50	15.24	68
6341-2404	3/4	19.05	4	101.60	50	15.24	91
6341-2405	3/4	19.05	5	127.00	50	15.24	112
6341-2406	3/4	19.05	6	152.40	50	15.24	133
6341-2407	3/4	19.05	7	177.80	50	15.24	157
6341-2408	3/4	19.05	8	203.20	50	15.24	182
6341-2410	3/4	19.05	10	254.00	50	15.24	226
6341-2412	3/4	19.05	12	304.80	50	15.24	270
6341-2448	3/4	19.05	18	1219.20	50	15.24	1120
6341-3202	1	25.40	2	50.80	50	15.24	77
6341-3203	1	25.40	3	76.20	50	15.24	95
6341-3204	1	25.40	4	101.60	50	15.24	116
6341-3205	1	25.40	5	127.00	50	15.24	144
6341-3206	1	25.40	6	152.40	50	15.24	173
6341-3207	1	25.40	7	177.80	50	15.24	199
6341-3208	1	25.40	8	203.20	50	15.24	228
6341-3210	1	25.40	10	254.00	50	15.24	289
6341-3212	1	25.40	12	304.80	50	15.24	345
6341-3248	1	25.40	18	1219.20	50	15.24	1420



# **COUPLINGS & ACCESSORIES**



The value of a hose is enhanced by the proper selection of couplings.

Couplings attach to the end of the hose to facilitate connection to a pressure source. In order to make the transition successful, the coupling termination must provide a leak-proof seal and the hose/coupling interface must be properly matched.

**SAFETY WARNING** - Because the hose/coupling interface is critical to the hose assembly performance, always follow the specific instructions of the hose and coupling manufacturers regarding the match of hose/fittings and assembly procedures. Trained personnel using proper tools and procedures should make the hose assemblies. Failure to follow the manufacturers' instructions or failure to use trained personnel might be dangerous and could result in damage to property and serious bodily injury.

Jason offers a wide range of couplings & accessories that complement the hose line and the markets they serve.

#### **COUPLINGS INCLUDE:**

- Crimp Cam and Groove Couplings
- Crimp Combination Nipples
  - Sleeves
  - -Ferrules
- Standard Cam and Groove Couplings
  - Anti-Leak C & G Couplings
  - Reducing C & G Couplings
  - Tank Truck API Adapters, Caps & Couplers
- Universal Couplings
- Ground Joint Couplings
- Sandblast Hose Couplings
- Locking Lever Pump Couplings
- Combination Hose Nipples

#### **ACCESSORIES INCLUDE:**

- Clamps Interlocking & Double Bolt
- Brass Ball Valves, Mini Ball Valves
- Foot Valves
- Nozzles
- Wrenches
- Strainers for Water Suction Hose
- Strainers for Oil & Gas Drilling
- Sight Glasses
- Pump Plate Strainers
- Quick Connect Air Couplers

# **COUPLINGS & ACCESSORIES**



#### **JASON CRIMP METHODOLOGY**

This brochure will introduce you to the "Jason Crimp Methodology" for industrial hose and couplings. We believe that crimping offers a far superior assembly method for the following reasons:

- There is more retention along the shank or barb. More retention means a significant decrease in possible leaks.
- Provides a much higher safety factor than what bands can provide.
- No sharp edges. Banded assemblies can have four or more sharp edges that create the possibility that the assembler could be hurt.
- A crimped ferrule or sleeve has smooth edges which make it safe to handle and a better look to the overall assembly.
- The shank lengths of our cam and groove fittings are a match with the sleeves and ferrules. This creates better retention than banded or swaged assemblies and helps to avoid damage to the tube and/or cover.



Please do not mix Jason Industrial couplings with other products. We cannot recommend working pressures or crimp specifications for non-Jason parts. Please follow the safety recommendations as published in the NAHAD Industrial Hose Assembly Specification Guidelines

We recommend that you refer to the NAHAD Industrial Hose Assembly Specification Guidelines for industry-accepted practices for assembling hoses and couplings, which include hydrostatic testing. Please note that Jason couplings, ferrules and sleeves are designed to work together.

Please do not mix and match with other products.

RECOMMENDED WORKING PRESSURES				
Size	Combina	ation Nipples	Cam & Groove	
(inch)	Sleeve	Ferrule	Sleeve	Ferrule
1-1/2	300	350	250	250
2	250	300	250	250
3	200	300	125	150
4	175	300	110	150

Working pressures are given in pounds per square inch (PSI) at 70°F ambient temperature.

**PLEASE NOTE:** The working pressure of an assembly is equal to the component with the least working pressure.



# CRIMP COUPLINGS, FERRULES & SLEEVES

### **CAM & GROOVE CRIMP COUPLINGS**

**All Cam & Groove Fittings are Aluminum** 

### **PART C** FEMALE COUPLER x HOSE SHANK

Female end fits male adapter or Dust Plug. Shank fits into hose ID. Bowl has recess for washer replacement.



Part	Size	Shank (	O.D.	0	Stem O.D.	
Number	(inch)	inch	mm	Serrations	inch	mm
C150AC	1-1/2	1.535	39.0	10	1.54	39.0
C200AC	2	2.027	51.5	12	2.03	51.5
C250AC	2-1/2	2.527	64.2	15	2.53	64.2
C300AC	3	3.031	77.0	14	3.03	77.0
C400AC	4	4.035	102.5	15	4.04	102.5
C600AC	6	6.047	153.6	22	6.05	153.6

WARNING: This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

## **PART E** MALE ADAPTER x HOSE SHANK

Male end fits female coupler or Dust Cap. Shank fits into hose ID.



Part	Size	Shank	O.D.		Stem O.D.	
Number	(inch)	inch	mm	Serrations	inch	mm
E150AC	1-1/2	1.535	39.0	10	1.54	39.0
E200AC	2	2.027	51.5	12	2.03	51.5
E250AC	2-1/2	2.527	64.2	15	2.53	64.2
E300AC	3	3.031	77.0	14	3.03	77.0
E400AC	4	4.035	102.5	15	4.04	102.5
E600AC	6	6.047	153.6	22	6.05	153.6

# **COMBINATION HOSE NIPPLES**MALE x HOSE SHANK-PLATED STEEL

Combination Nipples are used in a variety of fluid applications. End (male) threads are NPT Will mate with Foot Valves, Strainers, Cam & Groove Part A & D, etc. and are the same size as the shank.



Part	Size (inch)	Stem O.D.		
Number		inch	mm	
CN150PC	1-1/2	1.54	39.0	
CN200PC	2	2.03	51.5	
CN250PC	2-1/2	2.53	64.2	
CN300PC	3	3.03	77.0	
CN400PC	4	4.04	102.5	
CN600PC	6	6.05	153.6	

# CRIMP COUPLINGS, FERRULES & SLEEVES



Jason Ferrules and Sleeves are designed to be used with Jason Combination Hose Nipples and the Part "C" and "E" Cam & Groove fittings (crimp style only). For crimp O.D.'s, please refer to pages 99 to 105.

Working pressures are determined by the type of hose and coupling used in the application.

#### **DO NOT** mix with other products.

\*Please Note - for any hose with a natural rubber tube, we recommend using a ferrule only. During the crimping process, couplings have a tendency to be squeezed out of proper crimp position if a crimp sleeve is being used.

# **CRIMP FERRULES (Plated Steel)**

Warning - Do not use in steam applications



## **NOMENCLATURE**

# Ferrule Part Number **212F20P**

212 = 2-12/16" Ferrule I.D.

F = Ferrule

20 = 2" Hose I.D.

P = Plated Steel

Size (inch)	Part Number	I.D. (inch)
1-1/2	115F15P	1-15/16
1-1/2	200F15P	2
1-1/2	201F15P	2-1/16
1-1/2	202F15P	2-2/16
1-1/2	203F15P	2-3/16
1-1/2	204F15P	2-4/16
1-1/2	205F15P	2-5/16
1-1/2	206F15P	2-6/16
2	208F15P	2-8/16
2	209F20P	2-9/16
2	210F20P	2-10/16
2	211F20P	2-11/16
2	212F20P	2-12/16
2	213F20P	2-13/16

Hose Size (inch)	Part Number	Ferrule I.D. (inch)
2	214F20P	2-14/16
2	215F20P	2-15/16
2-1/2	302F25P	3-2/16
2-1/2	303F25P	3-3/16
2-1/2	304F25P	3-4/16
2-1/2	305F25P	3-5/16
2-1/2	307F25P	3-7/16
3	308F30P	3-8/16
3	309F30P	3-9/16
3	310F30P	3-10/16
3	311F30P	3-11/16
3	312F30P	3-12/16
3	313F30P	3-13/16
3	314F30P	3-14/16

Part Number	I.D. (inch)
315F30P	3-15/16
409F40P	4-9/16
410F40P	4-10/16
411F40P	4-11/16
412F40P	4-12/16
413F40P	4-13/16
414F40P	4-14/16
415F40P	4-15/16
500F40P	5
501F40P	5-1/16
610F60P	6-10/16
614F60P	6-14/16
702F60P	7-2/16
706F60P	7-6/16
	Number 315F30P 409F40P 410F40P 411F40P 412F40P 413F40P 414F40P 500F40P 501F40P 610F60P 614F60P 702F60P

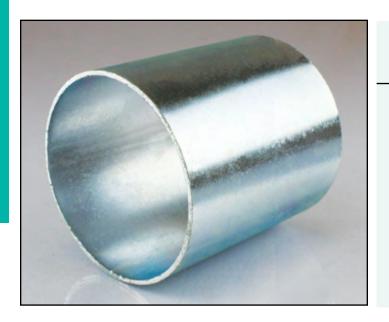
See Page 97 for Ferrule/Sleeve Wall Thickness



# CRIMP COUPLINGS, FERRULES & SLEEVES

# **CRIMP SLEEVES (Plated Steel)**

Warning - Do not use in steam applications



# **NOMENCLATURE**

Sleeve Part Number 305S25P

305 = 3-5/16" Sleeve I.D.

S = Sleeve

25 = 2-1/2" Hose I.D.

P = Plated Steel

Hose Size (inch)	Part No.	Sleeve I.D. (inch)
1-1/2	115S15P	1-15/16
1-1/2	200S15P	2
1-1/2	201S15P	2-1/16
1-1/2	202S15P	2-2/16
1-1/2	203S15P	2-3/16
1-1/2	204S15P	2-4/16
1-1/2	205S15P	2-5/16
1-1/2	206S15P	2-6/16
2	206S20P	2-6/16
2	208S20P	2-8/16
2	209S209	2-9/16
2	210S20P	2-10/16
2	211S20P	2-11/16
2	212S20P	2-12/16
2	213S20P	2-13/16
2	214S20P	2-14/16

Hose Size (inch)	Part No.	Sleeve I.D. (inch)
2	215S20P	2-15/16
2-1/2	300S25P	3
2-1/2	302S25P	3-2/16
2-1/2	303S25P	3-3/16
2-1/2	304S25P	3-4/16
2-1/2	305S25P	3-5/16
2-1/2	307S25P	3-7/16
2-1/2	308S25P	3-8/16
3	308S30P	3-8/16
3	309S30P	3-9/16
3	310S30P	3-10/16
3	311S30P	3-11/16
3	312S30P	3-12/16
3	313S30P	3-13/16
3	314S30P	3-14/16
3	315S30P	3-15/16

Hose Size (inch)	Part No.	Sleeve I.D. (inch)
3	400S30P	4
4	409S40P	4-9/16
4	410S40P	4-10/16
4	411S40P	4-11/16
4	412S40P	4-12/16
4	413S40P	4-13/16
4	414S40P	4-14/16
4	415S40P	4-15/16
4	500S40P	5
4	610S40P	6-10/16
6	610S60P	6-10/16
6	614S60P	6-14/16
6	702S60P	7-2/16
6	706S60P	7-6/16
8	807S80P	8-7/16
8	808S80P	8-8/16

FERRULE OR SLEEVE WALL THICKNESS						
Hose I.D.	Sleeve or Ferrule Wall					
(inch)	inch	mm				
1-1/2	0.06	1.52				
2	0.06	1.52				
2-1/2	0.06	1.52				
3	0.09	2.29				
4	0.09	2.29				
6	0.12	3.05				



### **ASSEMBLY PROCEDURE RECOMMENDATIONS**

The following six pages will list the crimp OD's for 1-1/2" to 6" ID hoses. These crimp OD's are guides only. We recommend that you accurately measure the dimensions of each hose, test each assembly and document everything.

It is difficult to establish ironclad standards because of the many variables in hose construction. Hardwall versus softwall construction, corrugated versus smooth cover and differing compounds all play a part in the difficulty of establishing crimp-specific OD's.

Once again, do not mix other manufacturer's products (hose, ferrule, sleeve or coupling) with Jason Industrial products.

Before doing any assembly work, please do the following steps:

- 1. Make sure each hose end is cut square. Clean any debris from the tube interior.
- 2. Before the coupling is installed, check for any burrs or sharp edges. This will make the coupling insertion easier and prevent inner tube damage.
- 3. **This next step is vital!** Measure the Hose O.D. in at least three different locations on each end. This will ensure that the proper sized ferrule/sleeve is used.
  - a. Never try to enlarge the tube to make it easier to insert the coupling this could result in tearing the tube. Lubrication should only be used if necessary.
  - b. There is no need to buff the cover of the hose.
- 4. The fitting shank should be inserted into the hose to where the last serration is covered. Inserting past this point does not help hose/coupling retention. Do not insert hose against the stop on cam & groove parts C & E. The hose will extrude during the crimping process and will fill in that space.
- 5. Check the charts on the next two pages for the hose ID and find the correct crimp OD.
- 6. If a static charge needs to be maintained, then bend the helical wires inside the hose tube. Slide the sleeve or ferrule onto the hose. Insert the shank and complete the assembly.
- 7. In petroleum tank truck applications, it is recommended that the ends be sealed. After crimping, the ends will be exposed and will require a chloroprene cement to accomplish the seal.
- 8. Jason Industrial recommends that ferrules **ONLY** be used when crimping a hose with a natural rubber tube. These hoses have a tendency to squeeze out of the fitting during the crimping process.
- Each assembly should be hydrostatically tested to two times the working pressure, unless
  otherwise specified by the customer. Otherwise, please refer to the NAHAD Assembly
  Guidelines industry-accepted guidelines for hose assembly practices.
- 10. Non-sparking materials like brass or aluminum should be used if the assembly is conveying flammable liquids.

Please do not mix Jason Industrial couplings with other products. We cannot recommend working pressures or crimp specifications for non-Jason parts. Please follow the safety recommendations as published in the NAHAD Industrial Hose Assembly Specification Guidelines.



### **CRIMPING SPECIFICATIONS - 1-1/2"**

		Ferrule/						
Hose	e I.D.	Sleeve	Hose	O. D.	Wall Th	ickness	Crim	O. D.
(in.)	(mm)	Part No.	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
1-1/2	38.10	115F15P	1.796	45.62	0.148	3.75	1.86	47.23
		115S15P	1.812	46.02	0.156	3.96	1.87	47.52
			1.828	46.43	0.164	4.17	1.88	47.83
			1.844	46.84	0.172	4.37	1.90	48.16
			1.860	47.24	0.180	4.57	1.91	48.41
			1.876	47.65	0.188	4.78	1.92	48.77
			1.890	48.01	0.195	4.95	1.93	49.02
			1.906	48.41	0.203	5.16	1.94	49.23
1-1/2	38.10	200F15P	1.922	48.82	0.211	5.36	1.96	49.78
		200S15P	1.938	49.23	0.219	5.56	1.97	50.01
			1.954	49.63	0.227	5.77	1.98	50.39
			1.968	49.99	0.234	5.94	2.00	50.80
1-1/2	38.10	201F15P	1.984	50.39	0.242	6.15	2.01	51.05
		201S15P	2.000	50.80	0.250	6.35	2.02	51.28
			2.016	51.21	0.258	6.55	2.03	51.59
			2.032	51.61	0.266	6.76	2.05	52.07
1-1/2	38.10	202F15P	2.046	51.97	0.273	6.93	2.06	52.22
		202S15P	2.062	52.37	0.281	7.14	2.07	52.53
			2.078	52.78	0.289	7.34	2.08	52.86
			2.094	53.19	0.297	7.54	2.09	53.16
1-1/2	38.10	203F15P	2.110	53.59	0.305	7.75	2.11	53.47
		203S15P	2.126	54.00	0.313	7.95	2.12	53.80
			2.140	54.36	0.320	8.13	2.13	54.10
			2.156	54.76	0.328	8.33	2.14	54.41
1-1/2	38.10	204F15P	2.172	55.17	0.336	8.53	2.16	54.74
		204S15P	2.188	55.58	0.344	8.74	2.17	55.04
			2.204	55.98	0.352	8.94	2.18	55.35
			2.218	56.34	0.359	9.12	2.19	55.68
1-1/2	38.10	205F15P	2.234	56.74	0.367	9.32	2.21	56.13
		205S15P	2.250	57.15	0.375	9.53	2.22	56.31
			2.266	57.56	0.383	9.73	2.23	56.62
			2.282	57.96	0.391	9.93	2.24	56.92
1-1/2	38.10	206F15P	2.296	58.32	0.398	10.11	2.25	57.24
		206S15P	2.312	58.72	0.406	10.31	2.27	57.55
			2.328	59.13	0.414	10.52	2.28	57.87
			2.344	59.54	0.422	10.72	2.29	58.18



## **CRIMPING SPECIFICATIONS - 2"**

	Ferrule							
	e I.D.	Sleeve		O. D.		ickness	-	O. D.
(in.)	(mm)	Part No.	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
2	50.80	208F20P	2.360	59.94	0.180	4.57	2.41	61.16
		208S20P	2.376	60.35	0.188	4.77	2.42	61.47
			2.390	60.71	0.195	4.95	2.43	61.79
			2.406	61.11	0.203	5.16	2.44	62.10
			2.422	61.52	0.211	5.36	2.46	62.41
			2.438	61.93	0.219	5.56	2.47	62.73
			2.454	62.33	0.227	5.77	2.48	63.04
			2.468	62.69	0.234	5.94	2.49	63.36
2	50.80	209F20P	2.484	63.09	0.242	6.15	2.51	63.75
		209S20P	2.500	63.50	0.250	6.35	2.52	63.98
			2.516	63.91	0.258	6.55	2.53	64.30
			2.532	64.31	0.266	6.76	2.55	64.92
2	50.80	210F20P	2.546	64.67	0.273	6.93	2.56	65.02
		210S20P	2.562	65.07	0.281	7.14	2.57	64.24
			2.578	65.48	0.289	7.34	2.58	65.55
			2.594	65.89	0.297	7.54	2.59	65.86
2	50.80	211F20P	2.610	66.29	0.305	7.74	2.61	66.29
		211S20P	2.626	66.70	0.313	7.95	2.62	66.49
			2.640	67.06	0.320	8.13	2.63	66.80
			2.656	67.46	0.328	8.33	2.64	67.12
2	50.80	212F20P	2.672	67.87	0.336	8.53	2.66	67.56
		212S20P	2.688	68.28	0.344	8.74	2.67	67.74
			2.704	68.68	0.352	8.94	2.68	68.06
			2.718	69.04	0.359	9.12	2.69	68.37
2	50.80	213F20P	2.734	69.44	0.367	9.32	2.71	68.83
		213S20P	2.750	69.85	0.375	9.52	2.72	69.00
			2.766	70.26	0.383	9.73	2.73	69.31
			2.782	70.66	0.391	9.93	2.74	69.63
2	50.80	214F20P	2.796	71.02	0.398	10.11	2.75	69.94
		214S20P	2.812	71.42	0.406	10.31	2.77	70.36
			2.828	71.83	0.414	10.51	2.78	70.57
			2.844	72.24	0.422	10.72	2.79	70.88
2	50.80	215F20P	2.860	72.64	0.430	10.92	2.80	71.19
		215S20P	2.876	73.05	0.438	11.12	2.82	71.51
			2.890	73.41	0.445	11.30	2.83	71.82
			2.906	73.81	0.453	11.51	2.84	72.13



### **CRIMPING SPECIFICATIONS - 2-1/2"**

		Ferrule/						
Hose	e I.D.	Sleeve	Hose	O. D.	Wall Th	ickness	Crimp	O. D.
(in.)	(mm)	Part No.	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
2-1/2	63.50	302F25P	2.984	75.79	0.242	6.15	3.01	76.45
		302S25P	3.000	76.20	0.250	6.35	3.02	76.71
			3.016	76.61	0.258	6.55	3.03	76.96
			3.032	77.01	0.266	6.76	3.05	77.47
			3.048	77.42	0.274	6.96	3.06	77.72
			3.062	77.77	0.281	7.14	3.07	77.98
			3.078	78.18	0.289	7.34	3.08	78.23
			3.094	78.59	0.297	7.54	3.09	78.49
2-1/2	63.50	303F25P	3.110	78.99	0.305	7.75	3.11	78.99
		303S25P	3.126	79.40	0.313	7.95	3.12	79.25
			3.140	79.76	0.320	8.13	3.13	79.50
			3.156	80.16	0.328	8.33	3.14	79.76
2-1/2	63.50	304F25P	3.172	80.57	0.336	8.53	3.16	80.26
		304S25P	3.188	80.98	0.344	8.74	3.17	80.52
			3.204	81.38	0.352	8.94	3.18	80.77
			3.220	81.79	0.360	9.14	3.19	81.03
2-1/2	63.50	305F25P	3.234	82.14	0.367	9.32	3.21	81.53
		305S25P	3.250	82.55	0.375	9.53	3.22	81.79
			3.266	82.96	0.383	9.73	3.23	82.04
			3.282	83.36	0.391	9.93	3.24	82.30
2-1/2	63.50	307F25P	3.300	83.82	0.400	10.16	3.26	82.80
		307S25P	3.312	84.12	0.406	10.31	3.27	83.06
			3.328	84.53	0.414	10.52	3.28	83.31
			3.344	84.94	0.422	10.72	3.29	83.57
			3.360	85.34	0.430	10.92	3.31	84.07
			3.376	85.75	0.438	11.13	3.32	84.33
			3.390	86.11	0.445	11.30	3.33	84.58
			3.406	86.51	0.453	11.51	3.34	84.84



		Ferrule/						
Hos	e I.D.	Sleeve	Hose	O. D.	Wall Th	ickness	Crimi	O. D.
(in.)	(mm)	Part No.	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
3"	76.20	308F30P	3.360	85.34	0.180	4.57	3.47	88.14
		308S30P	3.376	85.75	0.188	4.78	3.48	88.39
			3.392	86.16	0.196	4.98	3.49	88.65
			3.406	86.51	0.203	5.16	3.50	88.90
3"	76.20	309F30P	3.422	86.92	0.211	5.36	3.52	89.41
		309S30P	3.438	87.33	0.219	5.56	3.53	89.66
			3.454	87.73	0.227	5.77	3.54	89.92
			3.468	88.09	0.234	5.94	3.55	90.17
			3.484	88.49	0.242	6.15	3.57	90.68
			3.500	88.90	0.250	6.35	3.58	90.93
			3.516	89.31	0.258	6.55	3.59	91.19
			3.532	89.71	0.266	6.76	3.61	91.69
3"	76.20	310F30P	3.546	90.07	0.273	6.93	3.62	91.95
		310S30P	3.562	90.47	0.281	7.14	3.63	92.20
			3.578	90.88	0.289	7.34	3.64	92.46
			3.594	91.29	0.297	7.54	3.65	92.71
3"	76.20	311F30P	3.610	91.69	0.305	7.75	3.67	93.22
		311S30P	3.626	92.10	0.313	7.95	3.68	93.47
			3.640	92.46	0.320	8.13	3.69	93.73
			3.656	92.86	0.328	8.33	3.70	93.98
3"	76.20	312F30P	3.672	93.27	0.336	8.53	3.72	94.49
		312S30P	3.688	93.68	0.344	8.74	3.73	94.74
			3.704	94.08	0.352	8.94	3.74	95.00
			3.718	94.44	0.359	9.12	3.75	95.25
3"	76.20	313F30P	3.734	94.84	0.367	9.32	3.77	95.76
		313S30P	3.750	95.25	0.375	9.53	3.78	96.01
			3.766	95.66	0.383	9.73	3.79	96.27
			3.782	96.06	0.391	9.93	3.80	96.52
3"	76.20	314F30P	3.796	96.42	0.398	10.11	3.81	96.77
		314S30P	3.812	96.82	0.406	10.31	3.83	97.28
			3.828	97.23	0.414	10.52	3.84	97.54
- "			3.844	97.64	0.422	10.72	3.85	97.79
3"	76.20	315F30P	3.860	98.04	0.430	10.92	3.86	98.04
		315S30P	3.876	98.45	0.438	11.13	3.88	98.55
			3.890	98.81	0.445	11.30	3.89	98.81
0"	70.00	1005005	3.906	99.21	0.453	11.51	3.90	99.06
3"	76.20	400F30P	3.922	99.62	0.461	11.71	3.91	99.31
		400S30P	3.938	100.03	0.469	11.91	3.93	99.82
			3.954	100.43	0.477	12.12	3.94	100.08
			3.968	100.79	0.484	12.29	3.95	100.33



### **CRIMPING SPECIFICATIONS - 4"**

		Ferrule/						
Hos	e I.D.	Sleeve	Hose	O. D.	Wall Th	ickness	Crim	o O. D.
(in.)	(mm)	Part No.	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
4	101.80	409F40P	4.422	112.32	0.211	5.36	4.52	114.81
		409S40P	4.438	112.73	0.219	5.56	4.53	115.06
			4.454	113.13	0.227	5.77	4.54	115.32
			4.468	113.49	0.234	5.94	4.55	115.57
			4.484	113.89	0.242	6.15	4.57	116.08
			4.500	114.30	0.250	6.35	4.58	116.33
			4.516	114.71	0.258	6.55	4.59	116.59
			4.532	115.11	0.266	6.76	4.61	117.09
4	101.80	410F40P	4.456	113.18	0.273	6.93	4.62	117.35
		410S40P	4.562	115.87	0.281	7.14	4.63	117.60
			4.578	116.28	0.289	7.34	4.64	117.86
			4.594	116.69	0.297	7.54	4.65	118.11
4	101.80	411F40P	4.610	117.09	0.305	7.75	4.67	118.62
		411S40P	4.626	117.50	0.313	7.95	4.68	118.87
			4.640	117.86	0.320	8.13	4.69	119.13
			4.656	118.26	0.328	8.33	4.70	119.38
4	101.80	412F40P	4.672	118.67	0.336	8.53	4.72	119.89
		412S40P	4.688	119.08	0.344	8.74	4.73	120.14
			4.704	119.48	0.352	8.94	4.74	120.40
			4.718	119.84	0.359	9.12	4.76	120.90
4	101.80	413F40P	4.734	120.24	0.367	9.32	4.77	121.16
		413S40P	4.750	120.65	0.375	9.53	4.78	121.41
			4.766	121.06	0.383	9.73	4.79	121.67
			4.782	121.46	0.391	9.93	4.80	121.92
4	101.8	414F40P	4.796	121.82	0.398	10.11	4.81	122.17
		414S40P	4.812	122.22	0.406	10.31	4.83	122.68
			4.828	122.63	0.414	10.52	4.84	122.94
			4.844	123.04	0.422	10.72	4.85	123.19
4	101.80	415F40P	4.860	123.44	0.430	10.92	4.86	123.44
		415S40P	4.876	123.85	0.438	11.13	4.88	123.95
			4.890	124.21	0.445	11.30	4.89	124.21
	10:00		4.906	124.61	0.453	11.51	4.90	124.46
4	101.80	500F40P	4.922	125.02	0.461	11.71	4.91	124.71
		500S40P	4.938	125.43	0.469	11.91	4.93	125.22
			4.954	125.83	0.477	12.12	4.94	125.48
			4.968	126.19	0.484	12.29	4.95	125.73



## **CRIMPING SPECIFICATIONS - 6"**

		Formula/					1	
Цее	۰۱۵	Ferrule/	Цесе	0 D	Wall Th	ioknooo	Crim	- O D
	e I.D.	Sleeve		O. D.		ickness	-	o O. D.
(in.)	(mm)	Part No.	(in.)	(mm)	(in.)	(mm)	(in.)	(mm)
6	152.40	610F60P	6.422	163.12	0.211	5.36	6.58	167.13
		610S60P	6.438	163.53	0.219	5.56	6.59	167.39
			6.454	163.93	0.227	5.77	6.60	167.64
			6.468	164.29	0.234	5.94	6.61	167.89
			6.484	164.69	0.242	6.15	6.63	168.40
			6.500	165.10	0.250	6.35	6.64	168.66
			6.516	165.51	0.258	6.55	6.65	168.91
			6.532	165.91	0.266	6.76	6.67	169.42
			6.546	166.27	0.273	6.93	6.68	169.67
			6.562	166.67	0.281	7.14	6.69	169.93
			6.578	167.08	0.289	7.34	6.70	170.18
			6.594	167.49	0.297	7.54	6.71	170.43
6	152.40	614F60P	6.610	167.89	0.308	7.82	6.73	170.94
		614S60P	6.626	168.30	0.313	7.95	6.74	171.20
			6.640	168.66	0.320	8.13	6.75	171.45
			6.656	169.06	0.328	8.33	6.76	171.70
			6.672	169.47	0.336	8.53	6.78	172.21
			6.688	169.88	0.344	8.74	6.79	172.47
			6.704	170.28	0.352	8.94	6.80	172.72
			6.718	170.64	0.359	9.12	6.81	172.97
			6.734	171.04	0.367	9.32	6.83	173.48
			6.750	171.45	0.375	9.53	6.84	173.74
			6.766	171.86	0.383	9.73	6.85	173.99
			6.782	172.26	0.391	9.93	6.86	174.24
			6.796	172.62	0.398	10.11	6.87	174.50
			6.812	173.02	0.406	10.31	6.89	175.01
			6.828	173.43	0.414	10.52	6.90	175.26
			6.844	173.84	0.422	10.72	6.91	175.51
6	152.40	702F60P	6.860	174.24	0.430	10.92	6.92	175.77
		702S60P	6.876	174.65	0.438	11.13	6.94	176.28
			6.890	175.01	0.445	11.30	6.95	176.53
			6.906	175.41	0.453	11.51	6.96	176.78
			6.922	175.82	0.461	11.71	6.97	177.04
			6.938	176.23	0.469	11.91	6.99	177.55
			6.954	176.63	0.477	12.12	7.00	177.80
			6.970	177.04	0.485	12.32	7.01	178.05
			6.984	177.39	0.492	12.50	7.02	178.31
			7.000	177.80	0.500	12.70	7.04	178.82
			7.016	178.21	0.508	12.90	7.05	179.07
			7.032	178.61	0.516	13.11	7.06	179.32
			7.046	178.97	0.523	13.28	7.07	179.58
			7.062	179.37	0.531	13.49	7.08	179.83
			7.078	179.78	0.539	13.69	7.10	180.34
			7.094	180.19	0.547	13.89	7.11	180.59



# AT-A-GLANCE FERRULE/SLEEVE SELECTION CHART FOR JASON HOSE & COUPLINGS

Hos	e I.D.	Ferrule	Sleeve	Min	OD	Max	OD
(in.)	(mm)	Part No.	Part No.	(in.)	(mm)	(in.)	(mm)
1 1/2	38.10	115F15P	115S15P	1.796	45.62	1.906	48.41
1 1/2	38.10	200F16P	200S16P	1.922	48.82	1.968	49.99
1 1/2	38.10	201F15P	201S15P	1.984	50.39	2.020	51.31
1 1/2	38.10	202F15P	202S15P	2.046	51.97	2.094	53.19
1 1/2	38.10	203F15P	203S15P	2.110	53.59	2.156	54.76
1 1/2	38.10	204F15P	204S15P	2.172	55.17	2.218	56.34
1 1/2	38.10	205F15P	205S15P	2.224	56.49	2.282	57.96
1 1/2	38.10	206F15P	206S15P	2.296	58.32	2.344	59.54
2	50.80	208F20p	208S20P	2.360	59.94	2.468	62.69
2	50.80	209F20P	209S20P	2.484	63.09	2.532	64.31
2	50.80	210F20P	210S20P	2.546	64.67	2.594	65.89
2	50.80	211F20P	211S20P	2.610	66.29	2.656	67.46
2	50.80	212F20P	212S20P	2.672	67.87	2.718	69.04
2	50.80	213F20P	213S20P	2.734	69.44	2.782	70.66
2	50.80	214F20P	214S20P	2.796	71.02	2.844	72.24
2	50.80	215F20P	215S20P	2.860	72.64	2.906	73.81
2 1/2	63.50	302F25P	302S25P	2.984	75.79	3.094	78.59
2 1/2	63.50	303F25P	303S25P	3.110	78.99	3.156	80.16
2 1/2	63.50	304F25P	304S25P	3.172	80.57	3.220	81.79
2 1/2	63.50	305F25P	305S25P	3.234	82.14	3.282	83.36
2 1/2	63.50	307F25P	307S25P	3.300	83.82	3.406	86.51
3	76.20	308F30P	308S30P	3.360	85.34	3.406	86.51
3	76.20	309F30P	309S30P	3.422	86.92	3.532	89.71
3	76.20	310F30P	310S30P	3.546	90.07	3.594	91.29
3	76.20	311F30P	311S30P	3.610	91.69	3.656	92.86
3	76.20	312F30P	312S30P	3.672	93.27	3.718	94.44
3	76.20	313F30P	313S30P	3.734	94.84	3.782	96.06
3	76.20	314F30P	314S30P	3.796	96.42	3.844	97.64
3	76.20	315F30P	315S30P	3.860	98.04	3.906	99.21
3	76.20	400F30P	400S30P	3.922	99.62	3.968	100.79
4	101.80	409F40P	409S40P	4.422	112.32	4.532	115.11
4	101.80	410F40P	410S40P	4.546	115.47	4.594	116.69
4	101.80	411F40P	411S40P	4.610	117.09	4.656	118.26
4	101.80	412F40P	412S40P	4.672	118.67	4.718	119.84
4	101.80	413F40P	413S40P	4.734	120.24	4.782	121.46
4	101.80	414F40P	414S40P	4.796	121.82	4.844	123.04
4	101.80	415F40P	415S40P	4.860	123.44	4.906	124.61
4	101.80	500F40P	500S40P	4.922	125.02	4.968	126.19
6	152.40	610F60P	610S60P	6.422	163.12	6.594	167.49
6	152.40	614F60P	614S60P	6.610	167.89	6.844	173.84
6	152.40	702F60P	702S60P	6.860	174.24	7.094	180.19
6	152.40	706F60P	706S60P	7.110	180.59	7.344	186.54



### **CAM & GROOVE COUPLING SPECIFICATIONS**

#### **Markets Served:**

Air • Chemical • Food • Material Handling • Mining • Petroleum (including Fracking) • Steam • Water

Working Pressures	Working Pressures (maximum PSI) for Cam and Groove Couplers and Adapters								
Size (inch)	Aluminum	Aluminum Stainless Steel		Polypropolene					
1/2	-	150	-	125					
3/4	250	250	250	125					
1	250	250	250	125					
1-1/4	250	250	250	100					
1-1/2	250	250	250	100					
2	250	250	250	100					
2-1/2	150	150	150	-					
3	125	125	125	75					
4	100	100	100	60					
5	75	75	75	-					
6	75	75	75	-					
			1						

\*Metal coupling pressures are based on ambient temperature (+70°F or +21°C) with standard NBR gasket.

\*Plastic coupling pressures are based on ambient temperature (+70°F or +21°C) with standard NBR gasket.

#### **ALUMINUM**

#### **FEATURES:**

- Sizes 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4" and 6" are manufactured to comply with Mil Spec A-A-59326A.
   They will interchange with any coupling manufactured to the same standard.
- Size 5" complies to an ASTM spec. It will interchange to any other coupling manufactured to the same spec.
- The 1/2" size is not specified to any Mil spec.
- The 8" comes in two different styles. That size will interchange as follows:
  - Jason 800 series interchanges with PT Domestic, Kuriyama of America, Dixon Global and Campbell.
  - Jason 801 series interchanges with PT Import, NECO, Dixon Andrews, Evertite/APG, UPD and Sealfast.
- Aluminum body features being lightweight, rigid and having high tensile strength.
- Female couplers are supplied with safety pins.
- Cam arms are 304 Stainless.
- With the exception of the 1/2" size, all other sizes are supplied with safety pins, which will prevent disconnection during use.

#### **BRASS**

#### **FEATURES:**

- Sizes 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4" and 6" are manufactured to comply with Mil Spec A-A-59326A. They will
  interchange with any coupling manufactured to the same standard.
- Size 5" complies to an ASTM spec. It will interchange to any other coupling manufactured to the same spec.
- The 1/2" size is not specified to any Mil spec.
- Brass body has high tensile strength and rigidity.
- With the exception of the 1/2" size, all other sizes are supplied with safety pins, which prevent disconnection during use.

#### **MATERIAL SPECS:**

- Brass material meets ASTM B584 Grade C85700 specs.
- 304 Type stainless steel handles and pull rings.
- Steel handle pins, pull rings and safety clips are all zinc-plated.
- Brass handles are forged.
- Gaskets are nitrile.

#### **MATERIAL SPECS:**

- Aluminum alloy spec ASTM B85 Grade 383.
- 304 Type stainless steel handles.
- Steel handle pins, pull rings and safety clips are zinc-plated.
- Gaskets are nitrile.



### **CAM & GROOVE COUPLING SPECIFICATIONS**

#### **Markets Served:**

Air • Chemical • Food • Material Handling • Mining • Petroleum (including Fracking) • Steam • Water

### **304 STAINLESS STEEL**

#### **FEATURES:**

- Sizes 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4" and 6" are manufactured to comply with Mil Spec A-A-59326A. They will interchange with any coupling manufactured to the same standard.
- Size 5" complies to an ASTM spec. It will interchange to any other coupling manufactured to the same spec.
- The 1/2" size is not specified to any Mil spec.
- With the exception of the 1/2" size, all other sizes are supplied with safety pins, which will prevent disconnection during use.
- Chemical composition of the alloy is analyzed on every melt.
- Especialy capable for chemical and food applications.

#### **MATERIAL SPECS:**

- Coupling body material meets ASTM A666 304 stainless steel specifications.
- 304 Type stainless steel handles, safety pins and rings.
- Gaskets are nitrile.

### 316 STAINLESS STEEL

#### **FEATURES:**

- Sizes 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4" and 6" are manufactured to comply with Mil Spec A-A-59326A. They will interchange with any coupling manufactured to the same standard.
- Size 5" complies to an ASTM spec. It will interchange to any other coupling manufactured to the same spec.
- The 1/2" size is not specified to any Mil spec.
- Chemical composition of the alloy is analyzed on every melt.
- Especialy capable for chemical and food applications.

#### **MATERIAL SPECS:**

- Coupling body material meets ASTM A666 316 stainless steel specifications.
- 304 Type stainless steel handles, safety pins and rings.
- Gaskets are nitrile.

### **POLYPROPYLENE**

#### **FEATURES:**

- Sizes 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4" and 6" are manufactured to comply with Mil Spec A-A-59326A. They will interchange with any coupling manufactured to the same standard.
- The 1/2" size is not specified to any Mil spec.

#### **MATERIAL SPECS:**

- Black Schedule 80 polypropylene body.
- 304 Type stainless steel handles, safety pins and rings.
- Gaskets are nitrile.



#### PART A MALE ADAPTER x FEMALE THREAD

Male end fits coupler or Dust Cap. Female thread end is NPT.



			PART NUMBER		
Size (inch)	Aluminum <sup>2</sup>	304 Stainless <sup>2</sup>	316 Stainless <sup>2</sup>	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>
1/2	-	A050S	A050SS	-	A050P
3/4	A075A	A075S	A075SS	A075B	A075P
1	A100A	A100S	A100SS	A100B	A100P
1-1/4	A125A	A125S	A125SS	A125B	A125P
1-1/2	A150A	A150S	A150SS	A150B	A150P
2	A200A	A200S	A200SS	A200B	A200P
2-1/2	A250A	A250S	A250SS	A250B	-
3	A300A	A300S	A300SS	A300B	A300P
4	A400A	A400S	A400SS	A400B	A400P
5	A500A	-	-	-	-
6	A600A	A600S	A600SS	A600B	-
8	A800A **	-	-	-	-
8	A801A **	-	-	-	-

#### PART B FEMALE COUPLER x MALE THREAD

Female end fits male adapter or Dust Plug. Male end thread is NPT. Bowl has recess for washer replacement.



		PA	RT NUMBER		
Size (inch)	Aluminum <sup>2</sup>	304 Stainless <sup>2</sup>	316 Stainless <sup>2</sup>	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>
1/2	-	B050S	B050SS	-	B050P
3/4	B075A	B075S	B075SS	B075B	B075P
1	B100A	B100S	B100SS	B100B	B100P
1-1/4	B125A	B125S	B125SS	B125B	B125P
1-1/2	B150A	B150S	B150SS	B150B	B150P
2	B200A	B200S	B200SS	B200B	B200P
2-1/2	B250A	B250S	B250SS	B250B	-
3	B300A	B300S	B300SS	B300B	B300P
4	B400A	B400S	B400SS	B400B	B400P
5	B500A	-	-	-	-
6	B600A	B600S	B600SS	B600B	-
8	B800A **	-	-	-	-

#### PART C FEMALE COUPLER x HOSE SHANK

Female end fits male adapter or Dust Plug. Shank fits into hose ID. Bowl has recess for washer replacement.



**See F	Page 1	128 for	interchange.
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	PART NUMBER						
Size (inch)	Aluminum <sup>2</sup>	304 Stainless <sup>2</sup>	316 Stainless <sup>2</sup>	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>		
1/2	-	C050S	C050SS	-	C050P		
3/4	C075A	C075S	C075SS	C075B	C075P		
1	C100A	C100S	C100SS	C100B	C100P		
1-1/4	C125A	C125S	C125SS	C125B	C125P		
1-1/2	C150A	C150S	C150SS	C150B	C150P		
2	C200A	C200S	C200SS	C200B	C200P		
2-1/2	C250A	C250S	C250SS	C250B	-		
3	C300A	C300S	C300SS	C300B	C300P		
4	C400A	C400S	C400SS	C400B	C400P		
5	C500A	-	-	-	-		
6	C600A	C600S	C600SS	C600B	-		
8	C800A **	-	-	-	-		
8	C801A **	-	-	-	-		



WARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.

1 Brass products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov 2This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



#### **PART D** FEMALE COUPLER x FEMALE THREAD

Female end fits male adapter or Dust Plug. Female end thread is NPT. Bowl has recess for washer replacement.



Size	Part Number					
(inch)	Aluminum <sup>2</sup>	304 Stainless <sup>2</sup>	316 Stainless <sup>2</sup>	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>	
1/2	-	D050S	D050SS	-	D050P	
3/4	D075A	D075S	-	D075B	D075P	
1	D100A	D100S	D100SS	D100B	D100P	
1-1/4	D125A	D125S	D125SS	D125B	D125P	
1-1/2	D150A	D150S	D150SS	D150B	D150P	
2	D200A	D200S	D200SS	D200B	D200P	
2-1/2	D250A	D250S	D250SS	D250B	-	
3	D300A	D300S	D300SS	D300B	D300P	
4	D400A	D400S	D400SS	D400B	D400P	
5	D500A	-	-	-	-	
6	D600A	D600S	D600SS	D600B	-	
8	D800A **	-	-	-	-	
8	D801A **	-	-	-	-	

#### PART E MALE ADAPTER x HOSE SHANK

Male end fits female coupler or Dust Cap. Shank fits into hose ID.

#### **CRIMP WITH SLEEVES ONLY**



Cina			Part Num	ber	
Size (inch)	Aluminum	304 Stainless	316 Stainless	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>
1/2	-	E050S	E050SS	-	E050P
3/4	E075A	E075S	E075SS	E075B	E075P
1	E100A	E100S	E100SS	E100B	E100P
1-1/4	E125A	E125S	E125SS	E125B	E125P
1-1/2	E150A	E150S	E150SS	E150B	E150P
2	E200A	E200S	E200SS	E200B	E200P
2-1/2	E250A	E250S	E250SS	E250B	-
3	E300A	E300S	E300SS	E300B	E300P
4	E400A	E400S	E400SS	E400B	E400P
5	E500A	-	-	-	-
6	E600A	E600S	E600SS	E600B	-
8	E800A **	-	-	-	-
8	E801A **	-	-	-	-

#### PART F MALE ADAPTER x MALE THREAD

Male end fits female coupler or Dust Cap. Male end thread is NPT.



\*\*See Page 128 for interchange.

Size		Part Number				
(inch)	Aluminum 304 316 Stainless Stainless	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>			
1/2	-	F050S	F050SS	-	F050P	
3/4	F075A	F075S	F075SS	F075B	F075P	
1	F100A	F100S	F100SS	F100B	F100P	
1-1/4	F125A	F125S	F125SS	F125B	F125P	
1-1/2	F150A	F150S	F150SS	F150B	F150P	
2	F200A	F200S	F200SS	F200B	F200P	
2-1/2	F250A	F250S	F250SS	F250B	-	
3	F300A	F300S	F300SS	F300B	F300P	
4	F400A	F400S	F400SS	F400B	F400P	
5	F500A	-	-	-	-	
6	F600A	F600S	F600SS	F600B	-	
8	F800A **	-	-	-	-	

WARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. WARNING! Brass should never be exposed to use or any materials containing an income as a consuming that the state of the assembly leading to property damage, injury, or death.



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# **PART DC**

### **DUST CAP**

Fits male adapters.



Size			Part Number	r	
(inch)	Aluminum <sup>2</sup>	304 Stainless <sup>2</sup>	316 Stainless <sup>2</sup>	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>
1/2	-	DC050S	DC050SS	-	DC050P
3/4	DC075A	DC075S	DC075SS	DC075B	DC075P
1	DC100A	DC100S	DC100SS	DC100B	DC100P
1-1/4	DC125A	DC125S	DC125SS	DC125B	DC125P
1-1/2	DC150A	DC150S	DC150SS	DC150B	DC150P
2	DC200A	DC200S	DC200SS	DC200B	DC200P
2-1/2	DC250A	DC250S	DC250SS	DC250B	-
3	DC300A	DC300S	DC300SS	DC300B	DC300P
4	DC400A	DC400S	DC400SS	DC400B	DC400P
5	DC500A	-	-	-	-
6	DC600A	DC600S	DC600SS	DC600B	-
8	DC800A **	-	-	-	-

### PART DP

### **DUST PLUG**

Fits male adapters.



Size		r			
(inch)	Aluminum	304 Stainless	316 Stainless	Brass <sup>1</sup>	Black SCH. 80 Polypropylene <sup>2</sup>
1/2	-	DP050S	DP050SS	-	-
3/4	DP075A	DP075S	DP075SS	DP075B	DP075P
1	DP100A	DP100S	DP100SS	DP100B	DP100P
1-1/4	DP125A	DP125S	DP125SS	DP125B	DP125P
1-1/2	DP150A	DP150S	DP150SS	DP150B	DP150P
2	DP200A	DP200S	DP200SS	DP200B	DP200P
2-1/2	DP250A	DP250S	DP250SS	DP250B	-
3	DP300A	DP300S	DP300SS	DP300B	DP300P
4	DP400A	DP400S	DP400SS	DP400B	DP400P
5	DP500A	-	-	-	-
6	DP600A	DP600S	DP600SS	DP600B	-
8	DP800A **	-	-	-	-

<sup>\*\*</sup>See Page 128 for interchange.



WARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.



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2This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



### SERIES 800 & SERIES 801 - 8" CAM & GROOVE INTERCHANGE

Not all cam and groove couplings are interchangeable. At the 8" size, there are now two distinct designs. Jason has you covered on both types. See the charts below to interchange to the proper style coupling.

800 Series interchanges with: PT Domestic, Kuriyama of America, Dixon Global and Campbell				
Part N	umbers			
A800A	E800A			
B800A F800A				
C800A DC800A				
D800A DP800A				

801 Series interchanges with: Dixon Andrews, NECO, Evertite/APG, PT Import, UPD and Sealfast				
Part N	Part Numbers			
A801A	E801A			
*B801A	*B801A F801A			
C801A DC801A				
D801A DP801A				

<sup>\*</sup>Check with customer service for availability.

#### ANTI-LEAK ALUMINUM C x E CAM-LOCK COUPLINGS

This unique cam-lock employs a patented design that relies on two bands of rubber that act as a type of gasket surrounding two specific grooves on the cam-lock shank. When the hose wall is compressed against the bands of rubber, a preventive barrier is formed reducing the chance for leaks around the couplings.



	Size inch)	Part Number
1-1/2	Part C	C150ALF
2	Part C	C200ALF
3	Part C	C300ALF
4	Part C	C400ALF
6	Part C	C600ALF
1-1/2	Part E	E150ALF
2	Part E	E200ALF
3	Part E	E300ALF
4	Part E	E400ALF
6	Part E	E600ALF

REPLACEMENT BA	NDS - NITRILE				
Inside Diameter (inch):	1-1/2	2	3	4	6
Part Number :	RB15NBR	RB20NBR	RB30NBR	RB40NBR	RB60NBR



1 his product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

#### PART DCL **DUST CAP WITH LOCK OUT HANDLES**

Handles fold over top of cap. Hole provided for padlock or seal. Padlock or seal not furnished.



Size	Part Number			
(inch)	Aluminum with stainless steel handles	Stainless Steel with stainless steel handles		
1-1/4	DCL125A	DCL125S		
1-1/2	DCL150A	DCL150S		
2	DCL200A	DCL200S		
2-1/2	DCL250A	DCL250S		
3	DCL300A	DCL300S		
4	DCL400A	DCL400S		
6	DCL600A	DCL600S		



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### **REDUCING CAM & GROOVE COUPLINGS & ADAPTERS**



Adapter x Female NPT

Size (inch)	Aluminum <sup>1</sup>	Stainless Steel <sup>1</sup>
2 x 1-1/2	A2015A	-
2 x 2	-	A2020S
2 x 3	A2030A	-
3 x 2	A3020A	-
3 x 4	A3040A	-
4 x 3	A4030A	-
4 x 6	A4060A	-
6 x 4	A6040A	-

Size (inch)	Aluminum <sup>1</sup>	Stainless Steel <sup>1</sup>
1-1/2 x 1	B1510A	Oteel
-		-
2 x 1-1/2	B2015A	-
2 x 3	B2030A	-
3 x 2	B3020A	-
3 x 4	B3040A	-
4 x 3	B4030A	-

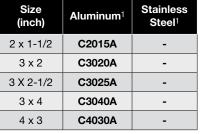


Coupler x Male NPT

(inch)	Aluminum	Steel <sup>1</sup>
1-1/2 x 1	B1510A	-
2 x 1-1/2	B2015A	-
2 x 3	B2030A	-
3 x 2	B3020A	-
3 x 4	B3040A	-
4 x 3	B4030A	-
6 x 4	B6040A	-



Coupler x Hose Shank





Size (inch)	Aluminum <sup>1</sup>	Stainless Steel <sup>1</sup>
1-1/2 x 1	D1510A	-
2 x 1-1/2	D2015A	-
3 X 2	D3020A	-
4 X 3	D4030A	-



Adapter x Hose Shank

Size (inch)	Aluminum	Stainless Steel
2 x 1-1/2	E2015A	-
2 X 2-1/2	E2025A	-
2 X 3	E2030A	-
3 X 2	E3020A	-
3 X 2-1/2	E3025A	-
3 X 4	E3040A	-
4 X 2	E4020A	-
4 X 3	E4030A	-



Adapter x Male NPT

Size (inch)	Aluminum	Stainless Steel
1-1/2 X 2	F1520A	-
2 X 1-1/2	F2015A	-
2 X 3	F2030A	-
3 X 2	F3020A	-
3 X 4	F3040A	-
4 X 3	F4030A	-
4 X 6	F4060A	-

AA	
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Ad	dapter x Adapter

Size (inch)	Aluminum	Stainless Steel
1 x 1	AA1010A	AA1010S
1-1/2 x 1-1/2	AA1515A	AA1515S
1-1/2 x 2	AA1520A	AA1520S
2 x 2	AA2020A	AA2020S
2 x 2-1/2	AA2025A	-
2 x 3	AA2030A	AA2030S
2-1/2 X 2-1/2	AA2525A	-
3 x 3	AA3030A	AA3030S
3 x 4	AA3040A	AA3040S
4 x 4	AA4040A	AA4040S
4 x 6	AA4060A	-
6 x 6	AA6060A	-



Size (inch)	Aluminum <sup>1</sup>	Stainless Steel <sup>1</sup>
1-1/2 X 2	DA1520A	-
2 X 1-1/2	DA2015A	-
2 X 3	DA2030A	DA2030S
2 X 4	DA2040A	-
3 X 1-1/2	DA3015A	-
3 X 2	DA3020A	DA3020S
3 X 4	DA3040A	-
4 X 2	DA4020A	-
4 X 3	DA4030A	DA4030S
4 X 6	DA4060A	-
6 X 4	DA6040A	DA6040S
6 X 5	DA6050A	-
8 X 6	DA8060A	_



DD	(F)	
	1	11/20
	Sa	
C	oupler x (	Coupler

Size (inch)	Aluminum <sup>1</sup>	Stainless Steel <sup>1</sup>
1-1/2 x 1-1/2	DD1515A	DD1515S
2 x 2	DD2020A	DD2020S
2 x 3	DD2030A	-
3 x 3	DD3030A	DD3030S
3 x 4	DD3040A	-
4 x 4	DD4040A	DD4040S



#### SAFETY-CAM COUPLINGS WITH LOCKING HANDLES

#### **FEATURES**

- 304 Stainless Arms.
- Aluminum Body.
- Available in Cam & Groove Types B, C, D and DC.
- Size range from 1-1/2" to 4".

#### **BENEFITS**

- No more dangling arms, no more snagging of the assembly.
- Prevents any disconnection during the transfer of solid or liquid products.
- Handles any rugged use. Resists disconnection if the assembly is being dragged.
- Easy-to-open just pull down on the cam arm ring to disengage the locking mechanism.
- Part C can be attached to the hose using bands, clamps or **Jason Crimp Sleeves.**

### PART B

#### Female Coupler x Male Thread



Size (inch)	Aluminum	Stainless Steel
1-1/2	B150A54S	B150SS54S
2	B200A54S	B200SS54S
2-1/2	B250A54S	-
3	B300A54S	B300SS54S
4	B400A54S	-

#### PART C

#### Female Coupler x Hose Shank



Size (inch)	Aluminum	Stainless Steel
1-1/2	C150A54S	C150SS54S
2	C200A54S	C200SS54S
2-1/2	C250A54S	-
3	C300A54S	C300SS54S
4	C400A54S	-

↑↑ This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

### **PART D**

### Female Coupler x Female Thread



Size (inch)	Aluminum	Stainless Steel
1-1/2	D150A54S	D150SS54S
2	D200A54S	D200SS54S
2-1/2	D250A54S	-
3	D300A54S	D300SS54S
4	D400A54S	-

#### PART DC

#### **Dust Cap**



Size (inch)	Aluminum	Stainless Steel
1-1/2	DC150A54S	DC150SS54S
2	DC200A54S	DC200SS54S
2-1/2	DC250A54S	-
3	DC300A54S	DC300SS54S
4	DC400A54S	-

↑↑ This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



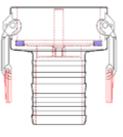
#### **CAM & GROOVE COUPLINGS - VAPOR RECOVERY**

To keep fumes from escaping into the atmosphere, use these fittings on the vapor return lines.

Aluminum Body ● Brass Handles ● Buna N Gasket ● Probe is Solid Brass ● Rated to 100 PSI WP

### TYPE C FEMALE COUPLER x HOSE SHANK<sup>1,2</sup>

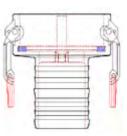




Part Number	Size (inch)	Description
C4030AVP	4 x 3	4" Coupler w/Probe x 3" Hose Shank
C300AVP	3	3" Coupler w/Probe x 3" Hose Shank
C400AVP	4	4" Coupler w/Probe x 4" Hose Shank

## TYPE C FEMALE COUPLER x HOSE SHANK - CRIMP FITTING12

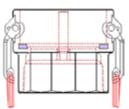




Part Number	Size (inch)	Description
C4030AVPC	4 x 3	4" Coupler w/Probe x 3" Hose Shank
C300AVPC	3	3" Coupler w/Probe x 3" Hose Shank
C400AVPC	4	4" Coupler w/Probe x 4" Hose Shank

# TYPE D FEMALE COUPLER x FEMALE THREAD 1.2

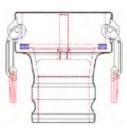




Part Number	Size (inch)	Description
D4030AVP	4 x 3	4" Coupler w/Probe x 3" Female Thread
D300AVP	3	3" Coupler w/Probe x 3" Female Thread
D400AVP	4	4" Coupler w/Probe x 4" Female Thread

### TYPE DA FEMALE COUPLER x HOSE SHANK<sup>12</sup>





Part Number	Size (inch)	Description
DA4030AVP	4 x 3	4" Coupler w/Probe x 3" Adapter

MARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.

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# **TANK TRUCK API ADAPTERS, CAPS, COUPLERS & GASKETS**For offloading through the API adapter and coupler.



### DUST CAP<sup>2</sup>

Used to protect the face of poppet side of the API adapter. Comes with a nitrile gasket. Suitable for all API valves that meet API RP-1004 specs.

Size (inch)	Part Number	Description Mater	
4	DC400ATC	API Dust Cap	Aluminum
4	DC400PPTC	API Dust Cap	Polypropylene



## COUPLER x ADAPTER<sup>2</sup>

Used in the process of unloading in order to connect the 4" API adapter to the 3" or 4" hose connection. Used primarily in gravity flow applications. Mates with 4" API RP-1004 tank truck adapters. Adapter comes with aluminum body and nitrile gasket. Angled down for better drainage.

Size (inch)	Part Number	Description	Material
4 x 3	DA4030ATC	4" API Coupler x 3" Adapter	Aluminum
4 x 4	DA4040ATC	4" API Coupler x 4" Adapter	Aluminum



## COUPLER x COUPLER<sup>2</sup>

This gravity drop coupler is designed to use gravity for quick and complete off-loading. Mates with all API RP-1004 bottom loading adapters. This coupler has an aluminum body and nitrile gaskets. Angled down for better drainage.

Size (inch)	Part Number	Description	Material
4 x 4	DD4040ATC	4" API Coupler x 4" Coupler	Aluminum

## REPLACEMENT GASKET<sup>2</sup>

Size (inch)	Part Number	Description Materia	
4	G400NBRTC	Gasket for 4" API Coupler	Nitrile



WARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.



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#### FLAT FACE FLANGE COUPLINGS - 150 PSI

### PART A - Male Adapter x Flat Face Flange



Part Number	Size (inch
A300A3F	3
A400A3F	4
A600A3F	6
A800A3F	8

**ASTM BOLT SIZES** 

# PART D - Female Coupler x Flat Face Flange<sup>2</sup>



Part Number	Size (inch
D300A3F	3
D400A3F	4
D600A3F	6
D800A3F	8

**ASTM BOLT SIZES** 

#### **ACCESSORIES FOR CAM & GROOVE COUPLINGS**

Part Number	Item	Description
SPWS	Safety Pin	Fits sizes 1/2" thru 5 "
SPXS	Safety Pin	Fits sizes 6" thru 8 "
CH12S	Security Chain	Stainless steel; 12"

WARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.

18 Prass products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov Brass products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

2 This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



# REPLACEMENT GASKETS FOR CAM & GROOVE COUPLINGS

-:	Black	White	Standard			Gaske	et Dimensio	ons	
Size	NBR <sup>2</sup>	NBR	Bio-Fuel <sup>2</sup>	Inside D	iameter	Outside D	Diameter	Thic	kness
		FDA		inch	mm	inch	mm	inch	mm
1/2	S050N	-	-	0.688	17.46	1.031	26.19	0.156	3.96
3/4	S075N	-	-	0.875	22.23	1.375	34.93	0.218	5.54
1	S100N	-	-	1.063	27.00	1.563	39.70	0.250	6.35
1-1/4	S125N	-	-	1.359	34.52	1.938	49.23	0.250	6.35
1-1/2	S150N	S150NF	S150BFR	1.625	41.28	2.188	55.58	0.250	6.35
2	S200N	S200NF	S200BFR	2.000	50.80	2.625	66.68	0.250	6.35
2-1/2	S250N	-	-	2.375	60.33	3.125	79.38	0.250	6.35
3	S300N	S300NF	S300BFR	3.000	76.20	3.719	94.46	0.250	6.35
4	S400N	S400NF	S400BFR	4.000	101.60	4.875	123.83	0.250	6.35
5	S500N	-	-	4.875	123.83	5.938	150.83	0.250	6.35
6	S600N	-	S600BFR	6.000	152.40	7.063	179.40	0.250	6.35
8	S800N	-	-	8.125	206.38	9.313	236.55	0.343	8.71

NOTE: Standard Bio-Fuel Gasket comes with one red stripe.

0.	Heavy Duty			Outside [	Diameter	Thickness		
Size	Bio-Fuel Part Number <sup>2</sup>	inch	mm	inch	mm	inch	mm	
2	S200HBFR	2.000	50.80	2.625	66.68	0.278	7.05	
3	S300HBFR	3.000	76.20	3.719	94.46	0.278	7.05	
4	S400HBFR	4.000	101.60	4.875	123.83	0.278	7.05	

**NOTE:** Heavy Duty Bio-Fuel Gasket comes with two blue stripes.

# REPLACEMENT HANDLES FOR CAM & GROOVE COUPLINGS

Size (inch)	1	1-1/4	1-1/2	2	2-1/2	3	4	6	8
Brass <sup>1</sup>	HRP10B	HRP12B	HRP15B	HRP20B	HRP25B	HRP30B	HRP40B	HRP60B	HRP80B
304 Stainless Steel	HRP10S	HRP12S	HRP15S	HRP20S	HRP25S	HRP30S	HRP40S	HRP60S	-
Lock-Out 304 Stainless Steel	-	-	LHP150S	LHP200S	LHP250S	LHP300S	LHP400S	LHP600S	-



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2This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

# PIN LUG COUPLINGS



Threaded couplings for suction or discharge of water or other fluids. Standard threading is NPSM; National Pipe Straight Mechanical. 1-1/2" and 2-1/2" are available with additional NST thread; American National Fire Hose Straight Thread. (NST does not interchange). Pin lugs are on all sizes of female end. 2-1/2" through 6" also have pin lugs on male end.

## SET (M x F) PIN LUG SHANK COUPLINGS



Size (inch)	Thread	Aluminum with Brass Swivel	Brass with Brass Swivel
1-1/2	NPSM	AB150	BR150
1-1/2	NST	AB150NST	BR150NST
2	NPSM	AB200	BR200
2-1/2	NPSM	AB250	BR250
2-1/2	NST	AB250NST	BR250NST
3	NPSM	AB300	BR300
4	NPSM	AB400	BR400
6	NPSM	AB600	BR600

Iron Pin Lug Couplings available by special order.

### FEMALE PIN LUG SHANK COUPLINGS'



Size (inch)	Thread	Aluminum with Brass Swivel	Brass with Brass Swivel
1-1/2	NPSM	AB150F	BR150F
1-1/2	NST	AB150NSTF	BR150NSTF
2	NPSM	AB200F	BR200F
2-1/2	NPSM	AB250F	BR250F
2-1/2	NST	AB250NSTF	BR250NSTF
3	NPSM	AB300F	BR300F
4	NPSM	AB400F	BR400F
6	NPSM	AB600F	BR600F

### ANTI-LEAK PIN LUG COUPLINGS' - FOR LAYFLAT HOSE



Size (inch)	Thread	Aluminum with Brass Swivel
1-1/2	NPSM	AB150LF
2	NPSM	AB200LF
3	NPSM	AB300LF
4	NPSM	AB400LF

### REPLACEMENT WASHERS FOR PIN LUG SHANK COUPLINGS

Coupling Size (inch)	1-1/2	2	2-1/2	2-1/2 NST	3	4	6
Part Number	HW150	HW200	HW250	HW250NST	HW300	HW400	HW600

**WARNING!** Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.



Brass products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov 2 This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



# UNIVERSAL AIR COUPLINGS

### **UNIVERSAL AIR COUPLINGS - 2 LUG**

Used to connect air lines from compressors or other air source to all types of pneumatic tools and equipment. All 2 lug head connections are of one size for easy interchange. Hose shank or threaded end is coupling size. Male and Female threads are NPT. Malleable iron plated. (European style universals available special order.)

#### **Application of Universal Crowfoot Air Hose Couplings**

Universal crowfoot couplings are recommended to be used in the transfer of air and or water. The application should be in an open system where the air or water is in motion (dynamic) and not in a closed pressurized (static) condition. This dynamic application involves continuous flow, therefore, back pressure would be relieved by the very nature of the application. The applicable system should contain pressure relief valves to relieve any excess pressure. Safety clips and safety cables should be installed on either side of the coupling connection.

The rated, maximum working pressure of Universal Crowfoot Air Hose Couplings is 150 psi (at ambient temperature [70°F]) for all parts: HE, ME, FE.

#### WARNING: Universal Air Hose Couplings should NEVER be used for steam service.



HOSE END

Hose End Size	Iron Part No.
3/8"	HE038
1/2"	HE050
3/4"	HE075
1"	HE100



MALE END

Hose End Size	Iron Part No.
1/4"	ME025
3/8"	ME038
1/2"	ME050
3/4"	ME075
1"	ME100



FEMALE END

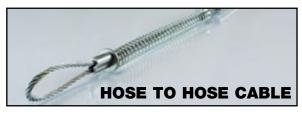
Hose End Size	Iron Part No.
1/4"	FE025
3/8"	FE038
1/2"	FE050
3/4"	FE075
1"	FE100

Item	Part Number
Washer for 2 Lug Universal <sup>1</sup>	UG2



### WHIPCHECK SAFETY CABLES

Prevent hose whip in case of accidental separation of coupling or clamp device.



Cable	Hose I.D.	Part No.
1/8" x 20"	1/2" to 1-1/4"	HHWC1
1/4" x 38"	1-1/2" to 3"	HHWC2
3/8" x 44"	1-1/2" to 4"	HHWC4



Cable	Hose I.D.	Part No.
1/8" x 20"	1/2" to 1-1/4"	HTWS1
1/4" x 38"	1-1/2" to 3"	HTWS2



<sup>1</sup>This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

# **UNIVERSAL AIR COUPLINGS**



### **UNIVERSAL AIR COUPLINGS - 4 LUG**



#### HOSE END

Hose End Size	Iron Part No.
1-1/4"	HE125
1-1/2	HE150
2	HE200



#### FEMALE END

Hose End Size	Iron Part No.
1-1/4"	FE125
1-1/2	FE150
2	FE200

Item	Part Number
Washer for 4 Lug Universal <sup>1</sup>	UG4



### **UNIVERSAL AIR COUPLING ACCESSORIES**



Item	Part Number
3/4" 3-Way Connector <sup>1</sup>	
Uses 3 sets of 2-lug connector to provide an extra outlet from one air source.	TWC
Malleable Iron Plated	



Item	Part Number
Dead End <sup>1</sup>	
Fits 2-lug head on universal couplings to block line. Hole in flat portion allows for securing dead end when not in use.	BEC
Malleable Iron Plated	



Item	Part Number		
Safety Pin & Lanyard	SPL		



# **AIR COUPLERS**

## **INDUSTRIAL QUICK CONNECT AIR COUPLERS**

#### **FEMALE**



#### **MALE**

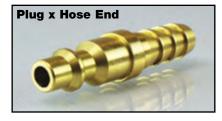


#### **HOSE END**









#### **FEATURES**

- Meets MIL-C-4109.
- All brass.
- Max inlet pressure is 300 PSI (20.7 BAR).
- Air flow is 40 SCFM.
- Seals are Buna-N.

Part No.	Description
QCF04B	Quick Connect x Female 1/4" NPT
QCM04B	Quick Connect x Male 1/4" NPT
QCF06B	Quick Connect x Female 3/8" NPT
QCM06B	Quick Connect x Male 3/8" NPT
QCH04B	Quick Connect x Hose End1/4" (Barbed)
QCH06B	Quick Connect x Hose End 3/8" (Barbed)
QPF04B	Plug x Female 1/4" NPT
QPM04B	Plug x Male 1/4" NPT
QPF06B	Plug x Female 3/8" NPT
QРМ06B	Plug x Male 3/8" NPT
QPH04B	Plug x Hose End 1/4" (Barbed)
QPH06B	Plug x Hose End 3/8" (Barbed)

## **COMPETITIVE PART NUMBER INTERCHANGE**

Jason	Milton	Amflo	ARO	Coil Hose	Dixon	Forney	Lincoln	NAPA	Parker	Truflate
QCF04B	715	C20	MSCF22-000	150	DC20	75317	632004	90-670	B23	13-235
QCM04B	716	C21	MSCM22-000	152	DC21	75316	-	90-672	B22	13-224
QCF06B	718	C20-23	MSCF23-000	151	DC2023	75479	-	90-667	B23E	13-236
QCM06B	719	C21-03	MSCM23-000	155	DC2103	-	-	90-657	B22E	13-226
QCH04B	717	C20-42	MSCH22-000	153	DC2042	75480	-	90-671	B20-3B	13-264
QCH06B	717-6	C20-44	MSCH23-000	-	DC2044	-	-	-	-	13-266
QPF04B	728	CP20	23902-200	1502	DCP20	75302	630204	90-676	НЗС	12-234/12-235
QPM04B	732	CP20-23	23902-300	1505	DCP2023	-	-	90-659	Н3С-Е	12-236
QPF06B	727	CP21	23902-210	1501	DCP21	75301	630104	90-674	H2C	12-224/12-225
QPM06B	733	CP21-03	23902-310	1503	DCP2103	75471	-	90-677	H2C-E	12-226
QPH04B	736	CP21-42	23902-220	1506	DCP2142	-	-	90-673	H8C	12-264
QPH06B	736-6	CP21-44	23902-420	1508	DCP2144	-	-	-	Н9С	12-266



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# **GROUND JOINT COUPLINGS**



### **GROUND JOINT COUPLINGS**

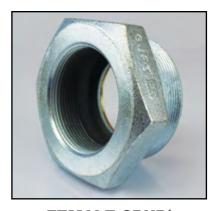
An all purpose coupling, the female ground joint consists of a MALE STEM, WING NUT and FEMALE SPUD. The female spud has NPT threads to accept the NPT threads of a rigid connection or male NPT nipple. Widely used for air, water or steam, the ground joint is secured with an interlocking clamp.

By replacing the female spud of a ground joint coupling with a double or male spud, hose to hose ground joint connections or hose to rigid connections are simplified. Double spuds for hose to hose connections are threaded NPS MALE X NPS MALE. (GJ wing nut is also NPS). For hose to rigid connection, the male spud is threaded NPS MALE X NPT MALE.



GROUND JOINT FEMALE

Hose Size* (inch)	Part No.
1/2	GJ050F
3/4	GJ075F
1	GJ100F
1-1/4	GJ125F
1-1/2	GJ150F
2	GJ200F
2-1/2	GJ250F
3	GJ300F
4	GJ400F



FEMALE SPUD

Hose Size* (inch)	Part No.
1/2	GFS050
3/4	GFS075
1	GFS100
1-1/4	GFS125
1-1/2	GFS150
2	GFS200
2-1/2	GFS250
3	GFS300
4	GFS400

\*Size also represents Wing Nut and Spud thread size.



**DOUBLE SPUD** 



**MALE SPUD** 

Hose Size* (inch)	Double Spud Part Number	Male Spud Part Number
1/2	GDS050	GMS050
3/4	GDS075	GMS075
1	GDS100	GMS100
1-1/4	GDS125	GMS125
1-1/2	GDS150	GMS150
2	GDS200	GMS200

<sup>1</sup>This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



# SANDBLAST HOSE COUPLINGS

### SANDBLAST HOSE COUPLINGS

There are three active sandblast system couplings; HOSE ENDS which are used to make hose to hose connections or hose to blast pot connections, NOZZLE HOLDERS that accept the male threaded end of a sandblast nozzle, and the THREADED POT END that is connected to the combination air and abrasive mix from the sandblast pot. All three are available in aluminum or brass. Hose ends are also available in Iron.



**HOSE ENDS** are sleeve type couplings that fit over the OD of the sandblast hose. They are secured to the hose with wood screws. Countersunk holes on the hose end ensure that the screws fit correctly and will not be snagged while the hose is in operation. Within the ID of the hose end is a corkscrew ridge that helps to twist the coupling onto the hose and more importantly, helps to minimize the force of blow-back. Hose-to-hose or hose-to-pot connections are made by the 2 lug crowfoot design. No matter what the hose size, the 2 log hose ends interchange for common connections.



**NOZZLE HOLDERS** are sleeve type couplings, secured to the hose with wood screws and have the same features as the sandblast hose end. The exception is that the end of the nozzle holder is NPT threaded to accept the sandblasting nozzle.

1-1/4" to 11.5" NPSM threads - All sizes



THREADED POT ENDS do not fit the hose, but rather are threaded (NPT or NPS) onto the sandblast pot. Once properly threaded to the discharge pipe on the pot, the 2 lug crowfoot design can now be connected to the 2 lug crowfoot design of the hose end. Now the pot can supply mix to the operator by way of the hose to the sandblast nozzle.

ŀ	lose			Nozzle	Holder
Inside Diameter (inch)	Outside Diameter (inch)	Aluminum <sup>2</sup>	Quick End Brass <sup>1</sup>	Aluminum <sup>2</sup>	Brass <sup>1</sup>
3/4	1-1/2	Q1A	Q1B	NH1A	NH1B
1	1-7/8	Q2A	Q2B	NH2A	NH2B
1-1/4	2-5/32	Q3A	Q3B	NH3A	NH3B
1-1/2	2-3/8	Q4A	Q4B	NH4A	NH4B

Thread	Туре	Threaded Pot End	
Size		Aluminum <sup>2</sup>	Brass <sup>1</sup>
1-1/4	NPT	SB1A	SB1B
1-1/4	NPS	SB10A	SB10B
1-1/2	NPT	SB2A	SB2B
1-1/2	NPS	SB20A	SB20B

Item	Part Number
<b>GASKETS</b> <sup>2</sup> Replacement gaskets for metal hose end/pot end. One size fits all.	QW

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# LOCKING LEVER PUMP COUPLINGS



### LOCKING LEVER PUMP COUPLINGS

- Full Vacuum Rated
- Type B Industrial
- Lock Pin Lever
- Galvanized

- 30° Articulation
- NBR O-Ring
- Interchangeable
- Quick and Easy Connections

#### MALE BALL x SHANK FEMALE SOCKET\* x SHANK<sup>1</sup>



Size (inch)	Part No.
2	BMS200
3	BMS300
4	BMS400
6	BMS600
8	BMS800

|--|

	Size (inch)	Part No.
ı	2	BFS200
ı	3	BFS300
ı	4	BFS400
ı	6	BFS600
	8	BFS800

\* includes O-Ring

#### **MALE BALL x THREAD\***



Size (inch)	Part No.
2	BMT200
3	ВМТ300
4	BMT400
6	ВМТ600
8	BMT800

\* NPT

#### FEMALE SOCKET x THREAD\*\*,1



Size (inch)	Part No.
2	BFT200
3	BFT300
4	BFT400
6	BFT600
8	BFT800

\* includes O-Ring \*\* NPT

#### O-RING\*,1



Size (inch)	Part No.
2	BOR200
3	BOR300
4	BOR400
6	BOR600
8	BOR800

\* NBR

Not recommended for chemicals or hazardous materials.





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# LOCKING LEVER PUMP COUPLINGS

## **LOCKING LEVER PUMP COUPLINGS**

- Full Vacuum Rated
- Type B Industrial
- **Lock Pin Lever**
- Galvanized

- 30° Articulation
- NBR O-Ring
- Interchangeable
- **Quick and Easy Connections**

#### **FULL ASSEMBLY\*,1**



Size (inch)	Part No.
2	BGA200
3	BGA300
4	BGA400
6	BGA600
8	BGA800

<sup>\*</sup> includes O-Ring

#### **LEVER RING\***



Size (inch)	Part No.
2	BLR200
3	BLR300
4	BLR400
6	BLR600
8	BLR800

<sup>\*</sup> with safety clip

### MALE BALL x FLANGE (150 ASA)



Size (inch)	Part No.
4	BMF400
6	BMF600
8	BMF800

Not recommended for chemicals or hazardous materials.

### FEMALE SOCKET\* x FLANGE (150 ASA)1



Part No.	Size (inch)
BFF400	4
BFF600	6
BFF800	8

<sup>\*</sup> includes O-Ring

# 150 ASA FLANGE DIMENSIONS

S	Size Bolt Circle Diameter				1	Diameter of Bolt Holes		Flange O.D.		Weight		
inch	mm	inch	mm		inch	mm	inch	mm	inch	mm	lbs.	kg.
4	101.60	7-1/2	190.50	8	5/8	15.88	3/4	19.05	9	228.60	13	29.25
6	152.40	9-1/2	241.30	8	3/4	19.05	7/8	22.23	11	279.40	19-1/2	43.88
8	203.20	11-3/4	298.45	8	3/4	19.05	7/8	22.23	13-1/2	342.90	30	67.50



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# **NIPPLES & ACCESSORIES**



### **COMBINATION HOSE NIPPLES**





**PLATED** 

**STAINLESS** 





POLYPROPYLENE<sup>1</sup>

**VICTAULIC** 

CN's are used in a variety of fluid applications. They are available in unplated steel, plated steel, polypropylene, victaulic and 304 stainless steel. End (male) threads are NPT (will mate with foot valves, strainers, cam and groove part A, D etc.) and are the same size as shank. Not for use with crimp ferrule.

# **COMBINATION HOSE NIPPLES - PART NUMBERS**

Hose I.D. (inch)	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
Unplated	CN050	CN075	CN100	CN125	CN150	CN200	CN250
Plated	CN050P	CN075P	CN100P	CN125P	CN150P	CN200P	CN250P
304 Stainless	CN050S	CN075S	CN100S	CN125S	CN150S	CN200S	CN250S
Polypropylene*1	CN050PP	CN075PP	CN100PP	CN125PP	CN150PP	CN200PP	CN250PP
Victaulic	CN050V	CN075V	CN100V	CN125V	CN150V	CN200V	CN250V

Hose I.D. (inch)	3	4	5	6	8	10	12
Unplated	CN300	CN400	CN500	CN600	CN800	CN1000	CN1200
Plated	CN300P	CN400P	CN500P	CN600P	CN800P	CN1000P	CN1200P
304 Stainless	CN300S	CN400S	CN500S	CN600S	-	-	-
Polypropylene* 1	CN300PP	CN400PP	-	-	-	-	-
Victaulic	CN300V	CN400V	CN500V	CN600V	CN800V	CN1000V	-

<sup>\*</sup>Black Schedule 80





# INTERLOCKING CLAMPS

## 2, 4 AND 6 BOLT INTERLOCKING CLAMPS

These clamps are used on any fitting with a collar to engage the forward gripping fingers of the interlocking clamp. However, they are most commonly used on ground joint females and male collared nipples. Smaller sizes provide a safe and economical securing method for universal hose ends. The forward gripping fingers engage the collar preventing the shank or stem from pulling out. Tightening the bolts secures the clamp around the O.D. of the hose.







#### Instructions for Installing 2, 4 and 6 Bolt Interlocking Clamps

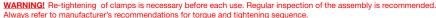
Bolts should be assembled dry.

- Proper clamp part number should be selected from chart to fit the appropriate size of hose and fully assemble onto a squarely cut hose fully inserted with all components in alignment.
- Bolts should be hand tightened until resistance is met as the hose is contacting the clamp halves.
- The bolts should be tightened sequentially one turn at a time in opposing fashion to gradually pull the clamp halves evenly.
- On 6 bolt versions, the tightening should be done in opposing crossing fashion as done on wheels.
- Fully torque the bolts in this manner until the values shown in the chart are achieved.
- Do not exceed the recommended torque.

Hoses will compress (cold flow) over time and periodically the bolts will need to be retorqued for optimum performance of the assembly. It is recommended that this retorquing be done daily for the first week of use, then check monthly as part of maintenance.

Clamps are designed for one-time use.







### **INTERLOCKING CLAMPS**



### 2, 4 AND 6 BOLT INTERLOCKING CLAMPS

Outside Diameter Range							
Fror	n	To	0	Number of Torque Bolts Ib <sub>f</sub> -ft.		Part Number	Reference Number
inch	Decimal	inch	mm				
11/16	0.69	3/4	0.75	2	6	2BS038	CD
15/16	0.94	1-1/16	1.06	2	12	2BC050	B4
1	1.00	1-1/8	1.13	2	12	2BS050	A4
1-1/16	1.06	1-3/16	1.19	2	12	2BC051	B5
1-1/8	1.13	1-5/16	1.31	2	21	2BS075	A9
1-3/16	1.19	1-5/16	1.31	2	21	2BC075	BU9
1-5/16	1.31	1-1/2	1.50	2	21	2BC076	В9
1-1/2	1.50	1-11/16	1.69	2	21	2BC077	B10
1-17/32	1.53	1-23/32	1.72	4	21	4BC100	BU14
1-13/32	1.41	1-9/16	1.56	4	21	4BC100A	156
1-5/8	1.63	1-27/32	1.84	4	21	4BC101	-
1-7/8	1.88	2-1/16	2.06	4	21	4BC102	B15
2-1/16	2.06	2-1/4	2.25	4	40	4BC125	B19
2-3/32	2.09	2-9/32	2.28	4	40	4BC150	BU24
2-1/4	2.25	2-7/16	2.44	4	40	4BC151	B24
2-15/32	2.47	2-23/32	2.72	4	40	4BC152	-
2-1/2	2.50	2-25/32	2.78	4	60	4BC200	BU29
2-3/4	2.75	3-1/16	3.06	4	60	4BC201	306
3-3/32	3.09	3-7/16	3.44	4	60	4BC202	B30
3-1/2	3.50	3-15/16	3.94	4	150	4BC250	B34
3-13/16	3.81	4-3/16	4.19	4	150	4BC300	B35
4-1/16	4.06	4-7/16	4.44	4	200	4BC301	B39
4-1/4	4.25	4-13/16	4.81	6	150	6BC400	BS39
4-7/8	4.88	5-5/16	5.31	6	150	6BC401	-
5-1/4	5.25	5-19/32	5.59	6	150	6BC402	-

**WARNING!** Re-tightening of clamps is necessary before each use. Regular inspection of the assembly is recommended. Always refer to manufacturer's recommendations for torque and tightening sequence.



### **DOUBLE BOLT CLAMPS**

#### **DOUBLE BOLT HOSE CLAMPS**

Reusable, these clamps provide an efficient means of securing couplings for low pressure discharge or suction service. Double bolt hose clamps are sized for hose OD's from 1-5/8" through 17-1/2". As the bolts are tightened, the double-tongue saddles fill the gap between the bolt lugs preventing pinching of the hose OD. Fully tightened, the double bolt clamps secure the full circumference of the hose. Plated ductile iron.



Hose O.D. Range		Tarress	Hose O.D. Range			T.,,,,,,	
From	То	Part Number	Torque lb <sub>f</sub> -ft.	From	То	Part Number	Torque lbs./ft.
1-5/8	1-15/16	DB049	20	7-11/16	8-3/16	DB818	125
1-7/8	2-3/8	DB060	20	8-1/4	8-7/8	DB875	125
2-3/8	3-1/64	DB076	20	8-15/16	9-7/8	DB988	125
3-1/2	3-11/16	DB094	40	9-15/16	11-3/8	DB1125	125
3-1/2	4	DB400	40	11-3/16	13	DB1275	125
4-1/16	4-7/16	DB463	40	12-3/16	14	DB1360	200
4-3/16	5	DB525	60	13-3/16	15	DB1450	200
5	5-1/2	DB550	60	15-1/16	17-1/2	DB1700	260
5-1/2	6-1/16	DB600	60	-	-	-	-
6-1/8	6-7/8	DB675	60	-	-	-	-
6-15/16	7-5/8	DB769	60	-	-	-	-

#### Instructions for Installing Double Bolt Hose Clamps

Bolts should be assembled dry.

- Proper clamp part number should be selected from chart to fit the appropriate size of hose and fully assemble onto a squarely cut hose fully inserted with all components in alignment.
- Bolts should be hand tightened until resistance is met as the hose is contacting the clamp halves.
- The bolts should be tightened sequentially one turn at a time to gradually pull the clamp halves evenly.
- Fully torque the bolts in this manner until the values shown in the chart are achieved.
- Do not exceed the recommended torque.

Hoses will compress (cold flow) over time and periodically the bolts will need to be retorqued for optimum performance of the assembly. It is recommended that this retorquing be done daily for the first week of use, then check monthly as part of maintenance.

Clamps are designed for one-time use.



**WARNING!** Re-tightening of clamps is necessary before each use. Regular inspection of the assembly is recommended. Always refer to manufacturer's recommendations for torque and tightening sequence.



Metal products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

### **DOUBLE BOLT CLAMPS**



#### SPIRAL DOUBLE BOLT HOSE CLAMPS FOR CORRUGATED HOSE

Clamps (for corrugated hose) manufactured in either clockwise (right hand) or counter clockwise (left hand) design, the spiral double bolt clamp fits between the convolutions on corrugated hose. When fully tightened, the wire secures the full circumference of the outside hose wall - not the convolutions, for a safe, economical and efficient securing method. Consult hose manufacturer for correct convolution direction. Direction of clamp spiral and hose convolution are the same.



Hose I.D. (inch)	Part Number *	Torque lb <sub>f</sub> -ft.
1-1/2	SDB150	15
2	SDB200	15
2-1/2	SDB250	15
3	SDB300	27
4	SDB400	27

Hose I.D. (inch)	Part Number*	Torque lb <sub>f</sub> -ft.
5	SDB500	60
6	SDB600	60
8	SDB800	60
10	SDB1000	60
12	SDB1200	60

\*Specify clockwise - cw or counterclockwise - ccw

#### Instructions for Installing Double Bolt Hose Clamps for Corrugated Hose

Bolt should be assembled dry.

- Proper clamp part number should be selected from chart to fit the appropriate size and corrugation direction of hose.
- Assemble the clamp onto a squarely cut hose fully inserted with all clamp components in alignment.
- Bolts should be hand tightened until resistance is met as the hose is contacting the clamp saddle and inside
  of bolt arcs.
- The bolt ends/nuts should be tightened sequentially one turn at a time to gradually pull the clamp halves evenly.
- Fully torque the nuts in this manner until the values shown in the chart are achieved. Do not exceed the recommended torque.

Hoses will compress (cold flow) over time and periodically the nuts will need to be retorqued for optimum performance of the assembly.

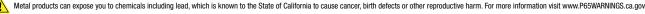
It is recommended that this retorquing be done daily for the first week of use, then checked monthly as part of maintenance.

Clamps are designed for one-time use.



**WARNING!** Re-tightening of clamps is necessary before each use. Regular inspection of the assembly is recommended.

Always refer to manufacturer's recommendations for torque and tightening sequence.



cizes may not be stocked in all locations. Check with eystemer service for availability



### **NIPPLES & ACCESSORIES**

#### **HEX AIR HOSE NIPPLES**

For air or many other applications, MS nipples are economical and reusable. The MS nipple accepts bands or clamps. However, each MS is specially designed with a collar behind the hex to engage the gripping fingers of an interlocking clamp. MS threads are NPT. Steel Plated. Use also as companion end of female ground joint.



**MS NIPPLE** 

Hose I.D. (inch)	Thread Size	Part Number
1/4	1/4	MS4-4
1/4	3/8	MS4-6
3/8	1/4	MS6-4
3/8	3/8	MS6-6
3/8	1/2	MS6-8
1/2	1/4	MS8-4
1/2	3/8	MS8-6
1/2	1/2	MS8-8
1/2	3/4	MS8-12
3/4	1/2	MS12-8
3/4	3/4	MS12-12
3/4	1	MS12-16
1	3/4	MS16-12
1	1	MS16-16
1-1/4	1-1/4	MS20-20
1-1/2	1-1/2	MS24-24
2	2	MS32-32
2-1/2	2-1/2	MS40-40
3	3	MS48-48
4	4	MS64-64

### **TUBE HOSE MENDER**

Type SM hose menders repair hose up to and including ID's of 12". After cutting out the damaged hose portion, insert each end of the mender (shanks) into the remaining good ends of the hose. Secure the SM type mender with bands or DB double bolt clamps. Each end will accommodate two or more bands or two clamps for an economical and efficient return to service. Plated Steel.



Hose I.D. (inch)	Part Number
1/2	SM050
3/4	SM075
1	SM100
1-1/4	SM125
1-1/2	SM150
2	SM200
2-1/2	SM250

Hose I.D. (inch)	Part Number
3	SM300
4	SM400
5	SM500
6	SM600
8	SM800
10	SM1000
12	SM1200



#### **BRASS BALL VALVES**





Part Number	Size (inch)	A (mm)	Thread
BV025BF	1/4	6.4	1/4 NPT
BV038BF	3/8	9.9	3/8 NPT
BV050BF	1/2	14.0	1/2 NPT
BV075BF	3/4	19.0	3/4 NPT
BV100BF	1	24.0	1 NPT
BV125BF	1-1/4	31.0	1-1/4 NPT
BV150BF	1-1/2	38.0	1-1/2 NPT
BV200BF	2	49.0	2 NPT
BV250BF	2-1/2	64.0	2-1/2 NPT
BV300BF	3	79.0	3 NPT
BV400BF	4	99.0	4 NPT

Ball Valve Components			
1	Valve Body	Brass	
2	Valve Cap	Brass	
3	O-Ring	PTFE	
4	Ball	Brass, chrome plated	
5	Stem Spacer/Gasket	PTFE	
6	O-Ring	PTFE	
7	Stem	Brass	
8	Nut	Brass	
9	Сар	Brass	
10	Handle	Carbon Steel	

#### **FEATURES:**

- Sizes to 2" rated 600 WOG.
- 2-1/2", 3" and 4" rated 400 WOG
- Temperature Range: Up to 150° F (66° C)
- Brass ball is chromium plated.
- Ball seat is Teflon®\*



**WARNING!** Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.



The Brass products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



#### **MINI BALL VALVES**



#### **FEATURES:**

- Valve body is plated brass.
- Temperature range up to 150°F (66°C).
- Handles working pressures up to 150 PSI.

Size (inch)	Part Number	Port Type
1/8	MBV018BS	Standard
1/4	MBV025BF	Full
3/8	MBV038BF	Full
1/2	MBV050BS	Standard

Female NPT x Female NPT

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#### **FOOT VALVES FOR WATER SUCTION HOSE**



Foot valves are used on the submersed end of the water suction hose to prevent the pump from losing it's prime when shut down. The foot valve stops the water from draining by a closing leather flapper gate. Each valve has a built in strainer that prevents debris from entering during operation. All sizes have NPS threads and complete valves are painted red.

Size (inch)	Part Number
1-1/2	FV150
2	FV200
2-1/2	FV250
3	FV300
4	FV400
6	FV600
8	FV800



#### STRAIGHT STREAM BRASS NOZZLES

Made from cast brass with satin finish. Orifice tip sizes are standard. All sizes, for use at 100 PSI, water only at 70°F.



Thread Size (inch)	Туре	Tip Size	Length (inch)	Part Number
3/4	GHT	1/4	6	BN075
3/4	NPSH	1/4	6	BN076
1	NPSH	5/16	8	BN100
1-1/4	NPSH	3/8	9	BN125
1-1/2	NPSH	1/2	10	BN150
1-1/2	NST	1/2	10	BN150NST
2	NPSH	9/16	12	BN200
2-1/2	NPSH	3/4	-	BN250
2-1/2	NST	3/4	-	BN251

MARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.



🔥 Brass products can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

#### **COMBINATION PLASTIC OR BRASS FOG NOZZLES**





Plastic nozzles are made of high impact bright red plastic with corrosion resistant metal parts. Brass nozzles are high quality heavy brass. These nozzles allow for straight stream or fog spray pattern in industrial, utility or commercial use.

Thread Size (inch)	Туре	Part Number Plastic <sup>2</sup>	Part Number Brass <sup>1</sup>
1-1/2	NPS	FN150	FN150B
1-1/2	NST	FN150NST	FN150BNST
2	NPS	-	FN200B
2-1/2	NPS	-	FN250B
2-1/2	NST	-	FN250BNST

Red Nozzles for use at 100 PSI, water only at 70°F Brass Nozzles for use at 100 PSI, water only at 70°F

<u>WARNING!</u> Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.

1 This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov <sup>2</sup>This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



#### SPANNER WRENCH FOR PIN LUG COUPLINGS



Made from ductile iron with easy grip handle, contour head to fit the coupling curve and special round hole to engage the pinlug.

Size (inch)	Part Number <sup>1</sup>
1-1/2	SW150
2	SW200
2-1/2	SW250
2 X 2-1/2	SW2025
3	SW300
4	SW400



#### **UNIVERSAL SPANNER WRENCH**



Ductile iron painted red. Complete with pry bar end and gas cock shut off/on feature. Other end used as pinlug or rocker lug wrenching.

Item	Part Number <sup>1</sup>
Universal Spanner Wrench	US-1

#### **ADJUSTABLE HYDRANT WRENCH**



A complete tool for the fire hydrant operation. The pentagonal nut head is adjustable to fit hydrant valves to 1-3/4" for on/off operation. The head also operates pin lug or rocker lug connections from 1-1/2" to 6"

Item	Part Number <sup>1</sup>
Adjustable Hydrant Wrench	HYD-1



Lighter in weight than the HYD-1 with the same adjustable features. Fits 1-3/4" pentagonal nuts. The head will operate hydrant cap and adapter pin or rocker lugs. Handle is plated.

Item	Part Number <sup>1</sup>
Adjustable Hydrant Wrench	HYD-2



1 This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



#### STRAINERS FOR WATER SUCTION HOSE

Used on the submersed end of suction hose to prevent debris from entering the pump during operation. All threads are NPS (trash strainers are square hole).







**TUBE** 





**ROUND HOLE** 

**SQUARE HOLE** 

**TOP HOLE** 

**BOTTOM HOLE** 

Size (inch)	Round Hole Part Number <sup>1</sup>	Square Hole Part Number <sup>1</sup>	Tube Part Number <sup>1</sup>	Top Hole Part Number <sup>1</sup>	Bottom Hole Part Number <sup>1</sup>
1-1/2	RHS150	SHS150	TRHS150	THS150	BHS150
2	RHS200	SHS200	TRHS200	THS200	BHS200
2-1/2	RHS250	-	-	-	-
3	RHS300	SHS300	TRHS300	THS300	BHS300
4	RHS400	SHS400	-	-	-
6	RHS600	SHS600	-	-	-
8	RHS800	-	-	-	-

#### **HYDRANT ADAPTERS - BRASS**



For industrial utility and fire department applications, these adapters allow easy connections from hydrant to smaller size hose. Made of heavy duty cast brass with satin finish, all female ends are supplied with pin lug wrenching. All threads are V cut.

Female Size (inch)	Female Thread	Male Size	Male End Thread	Part Number <sup>1</sup>
1-1/2	NPT	1-1/2	NST	HAB1516
1-1/2	NST	1-1/2	NPT	HAB1615
2	NPT	1-1/2	NST	HAB2016
2-1/2	NST	3/4	GHT	HAB075
2-1/2	NST	3/4	NPSM	HAB076
2-1/2	NST	1	NPSM	HAB100
2-1/2	NST	1-1/2	NPSM	HAB150
2-1/2	NST	1-1/2	NPT	HAB150NPT
2-1/2	NST	1-1/2	NST	HAB150NST
2-1/2	NST	2	NPSM	HAB200
2-1/2	NST	2	NPT	HAB200NPT
2-1/2	NST	2-1/2	NPT	HAB250NPT

Item	Part Number <sup>2</sup>	
Replacement Gasket	HAG250	

Other thread combinations and particular city/municipal hydrant threads are available in brass with minimal factory order.



WARNING! Brass should never be exposed to use of any materials containing ammonia due to susceptibility of brass for stress corrosion cracking. This attack can cause sudden and catastrophic failure of the assembly leading to property damage, injury, or death.



1 This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov 2 This product can expose you to chemicals including carbon black, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov



### ACCESSORIES FOR OIL & GAS DRILLING

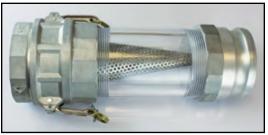
#### **STRAINERS - SUGAR CONE TYPE**



Applications include - water, oil or gas and steam where protection from foreign matter is required in a pipeline. For water, oil and gas applications, the strainer is normally inserted into a sight glass.

#### **FEATURES:**

- 304 Stainless Steel
- Permanently attached envelope gasket that makes the assembly with the sight glass and cam & groove fittings much easier.
- Gasket is a nitrile compound.



Part Number <sup>1</sup>	Size		
Fait Nulliber	inch	mm	
CS200SS	2.00	50.80	
CS300SS	3.00	76.20	
CS400SS	4.00	101.60	

#### **PUMP PLATE STRAINERS**





Pump Plate Strainers are made to thread into Part "A" or Part "D" cam and groove fittings. Threads are NPT. The strainer is used to protect pumps from large contaminants.

#### **FEATURES:**

- NPT thread.
- 1/4" holes.
- 0.20" thick.
- Aluminum.
- Easy to assemble with Parts A and D cam and groove couplings.

Part Number	Size		
rait Nullibei	inch	mm	
25PS150A	1.50	38.10	
25PS200A	2.00	50.80	
25PS300A	3.00	76.20	
25PS400A	4.00	101.60	

### **ACCESSORIES FOR OIL & GAS DRILLING**



#### **SIGHT GLASSES - POLYCARBONATE**



Sight Glasses enable the water hauler and pumper to view, at any time, what is streaming through the storage tank drain lines.

Part Number <sup>1</sup>	Size		
Fait Number	inch	mm	
SGT200	2.00	50.80	
SGT300	3.00	76.20	
SGT400	4.00	101.60	

#### **WARNING!**

- DO NOT TIGHTEN OR LOOSEN WHILE UNDER PRESSURE
- **AVOID DIRECT CONTACT WITH STRONG ACIDS OR CHEMICALS**
- ALWAYS PLACE THE PIPE WRENCH ON THE METAL CONNECTIONS AND NOT THE SIGHT GLASS ITSELF WHEN TIGHTENING.
- USE ON DRAIN LINES ONLY. NEVER USE ON FLOW LINES.
- ALWAYS USE AN OILY RAG WHEN CLEANING THIS PRODUCT.



<sup>1</sup>This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

#### **FEATURES:**

- Temperature range from -76°F to 185°F greater range than the poly-acrylic versions.
- Heavier than Schedule 80.
- Working pressure up to 500 PSI for all sizes.
- NPT pipe threads on both ends.
- Comes with thread protectors on both ends.
- High impact resistant polycarbonate material.
- Excellent UV ray resistance.
- Excellent resistance to most acids, low concentrations of alcohol and alkalis. Compatible with aliphatic hydrocarbons, aromatic hydrocarbons, mild detergents and cleaners, greases and oils & silicone greases and oils.

#### SIGHT GLASS FLANGES



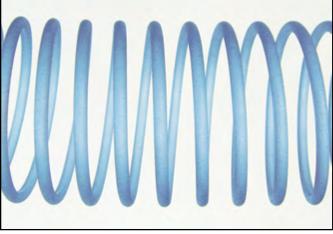
Sight Glass Flanges make it easier to see what is flowing through. Used in petroleum (fracking), water and oil tankers.

Part Number	Size		
Fait Number	inch	mm	
SGF300	3.00	76.20	
SGF400	4.00	101.60	



3098

#### **BANDING COILS**



This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information visit www.P65WARNINGS.ca.gov

**CONSTRUCTION:** Clear FDA PVC.

**APPLICATION:** Clockwise coils allow for a better

coupling securing surface on the

hose O.D.

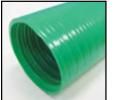
#### **FEATURES:**

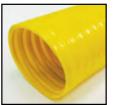
- Made with clear FDA PVC, 3098 can be used on any thermoplastic cover compound.
- Fits high profile clockwise O.D. corrugations for a smooth coupling securing surface.
- Fits low profile clockwise O.D. corrugations for a slightly raised coupling securing surface.
- Cut one length in half to accommodate both ends of one hose assembly.

Part	Fits Ho	se I.D.	Coil L	_ength
Number	inch	mm	inch	mm
3098-0150	1-1/2	38.1	6	152.4
3098-0200	2	50.8	7	177.8
3098-0250	2-1/2	63.5	8	203.2
3098-0300	3	76.2	8	203.2
3098-0400	4	101.6	9	228.6
3098-0500	5	127.0	10	254.0
3098-0600	6	152.4	14	355.6

#### 3099

Cut to 12" sleeves for each end of the assembly.







This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, birth defects or other reproductive harm.

For more information visit www.P65WARNINGS.ca.gov

#### **BANDING SLEEVES**

CONSTRUCTION: Green, yellow or orange PVC.

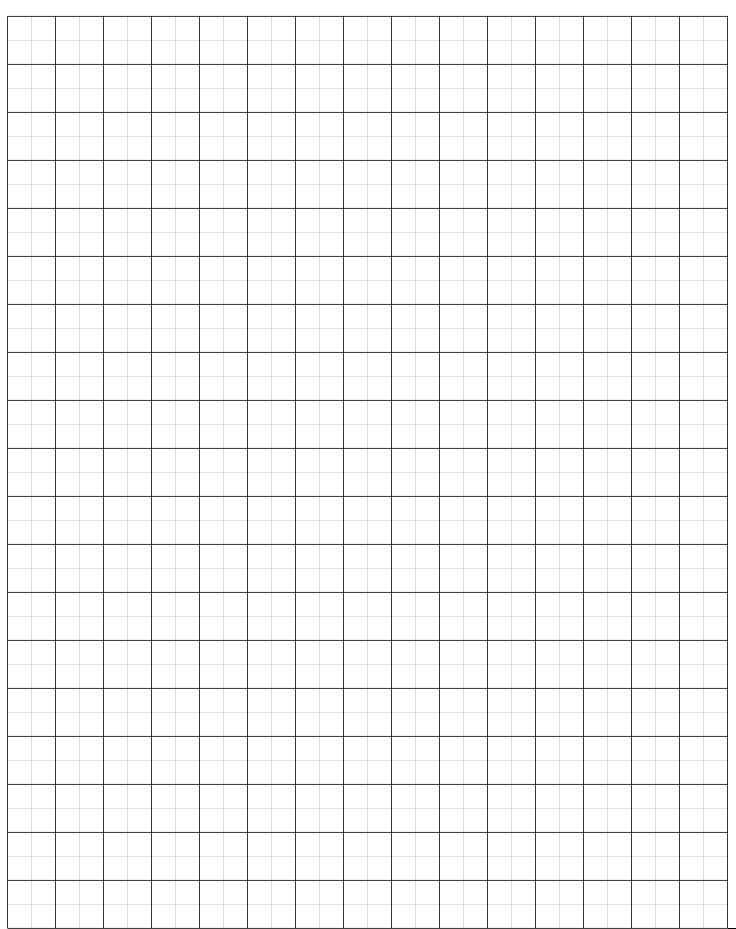
**APPLICATION:** Banding sleeves are made to thread over the outside of Jason thermoplastic petroleum hoses to allow better coupling securing surface on the O.D. of the hose.

#### **FEATURES:**

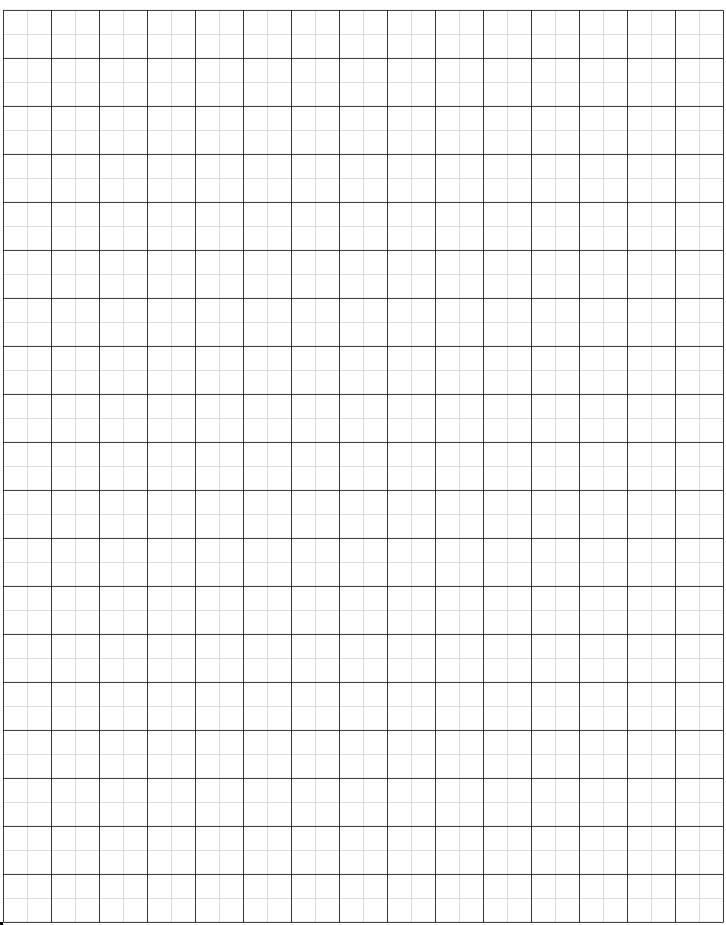
- Color-coded to fit specific Jason petroleum hoses
- Clockwise threading
- All sleeve lengths are 3 ft.

Part	Fits Ho	se I.D.	Use on	Sleeve
Number	inch	mm	Hose Series	Color
3099-03-3040	3	76.2	3040	Green
3099-04-3040	4	101.6	3040	Green
3099-03-3045	3	76.2	3045	Green
3099-04-3045	4	101.6	3045	Green
3099-02-3050	2	50.8	3050	Yellow
3099-03-3050	3	76.2	3050	Yellow
3099-04-3050	4	101.6	3050	Yellow
3099-03-3053	3	76.2	3053	Yellow
3099-04-3053	4	101.6	3053	Yellow
3099-02-3058	2	50.8	3058	Orange
3099-03-3058	3	76.2	3058	Orange
3099-04-3058	4	101.6	3058	Orange

### **NOTES**



### **NOTES**



**WARNING:** The following data has been compiled from generally available sources and should not be relied upon without consulting and following the hose manufacturer's specific chemical recommendations. Neglecting to do so might result in failure of the hose to fulfill it's intended purpose, and may result in possible damage to property and serious bodily injury.

		Elastomer / Pl	astics
NR	Natural Rubber	EPDM	Ethylene-propylene-diene-terpolymer
IR	Isoprene (synthetic)	FKM	Fluorocarbon rubber (Viton®*)
SBR	Styrene-butadiene	UHMW	Ultra High Molecular Weight Polyethylene
CR	Chloroprene (Neoprene®*)	XLPE	Cross-Linked polyethylene
NBR	Nitrile-butadiene (Buna-N)	CSM	Chloro-sulfonyl-polyethylene (Hypalon)
IIR	Isobutene-isoprene (Butyl)		

<sup>\*</sup>Trademark of DuPont Inc.

	Resis	tance Rat	ing
E	Excellent	С	Acceptable
G	Good	Х	Unsatisfactory
F	Fair	N	No Data

Maximum temperature 100°F (38°C) unless otherwise specified.





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									н										Н
							Ε	X	M								E	X	M
		S		N	ı	С	Р	L	W			S		N	ı	С	Р	L	W
	N	В	C	В	1	s 	D	P -	P -		N	В	C	В	1	s 	D	P _	P -
Absorpton Oil	R	R X	<b>R</b> G	R E	R X	M G	M X	<b>E</b>	<b>E</b> G	Aluminum Phosphate	R	R E	R	R E	R E	M E	M E	E	E
Acetal	C	C	С	X	G	С	C	G	G	Aluminum Salts	E	E	E	E	E	E	E	N	N
	С	X	F	X	E	С	G	E	G	Aluminum Sulfate	G	E	E	Е	Е	E	E	E	E
Acetaldehyde Acetamide	C	C	G	G	E	G	E	E	E	Aminobenzene	N	N	N	N	N	N	N	N	G
Acetate Solvents	С	X	X	X	С	X	С	E	E	Aminodimethylbenzene	N	N	N	N	N	N	N	N	N
Acetic Acid 10%	X	X	G	X	G	G	G	E	G	Aminoethanol	G	N	N	G	E	G	N	E	E
Acetic Acid 30%	X	X	С	G	G	G	G	E	E	Aminoethylethanolamine	N	N	N	N	E	N	G	G	E
Acetic Acid 50%	X	X	С	С	G	Х	G	E	G	Ammonia, Anhydrous	Е	С	Е	G	E	G	E	E	E
Acetic Acid, Glacial	X	X	С	Х	G	Х	Х	G	G	Ammonia Cupric Sulfate	X	N	N	E	Е	E	E	E	E
Acetic Aldehyde	X	N	N	N	G	Х	Е	Е	Е	Ammonia, Liquid	G	G	Е	Е	Е	Е	Е	Е	Е
Acetic Anhydride	Х	Х	G	Х	Е	G	Е	Е	G	Ammonia, in Water	G	G	G	G	G	G	Е	Е	Е
Acetic Ester (Ethyl Acetate)	X	Х	Х	Х	G	Х	G	Е	Е	Ammonium Acetate	Е	Е	G	Е	Е	Е	Е	Е	Е
Acetic Ether (Ethyl Acetate)	Х	х	х	Х	G	С	G	Е	Е	Ammonium Bicarbonate	Е	N	N	N	N	N	N	N	N
Acetic Oxide (Acetic Anhydride)	X	X	Х	Х	С	G	G	Е	Е	Ammonium Bisulfate (50%)	N	N	N	N	G	N	G	G	G
Acetone	С	С	F	Х	Е	F	Е	Е	Е	Ammonium Carbonate	Е	Е	Е	С	Е	Е	Е	Е	Е
Acetone Cyanohydrin	Х	Х	N	N	G	N	G	Е	G	Ammonium Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acetophenone	С	х	х	Х	Е	х	Е	G	G	Ammonium Flouride	Е	N	N	N	N	N	N	N	N
Acetyl Acetone	Х	Х	Х	Х	G	Х	Е	Е	Е	Ammonium Hydroxide	G	G	Е	G	Е	G	Е	Е	Е
Acetyl Chloride	Х	Х	Х	Х	С	х	С	G	G	Ammonium Metaphosphate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acetyl Oxide	Х	N	N	Х	Е	G	Е	Е	G	Ammonium Nitrate	G	Е	Е	Е	Е	Е	Е	Е	Е
Acetyl-P-Toluidine	Х	х	N	N	Х	N	Х	Е	Е	Ammonium Nitrite	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acetylene	Е	Е	G	Е	Е	Е	Е	Е	Е	Ammonium Persulfate	Е	Х	Е	х	Е	Е	G	Е	Е
Acetylene Dichloride (Dichlorethylene)	Х	Х	N	N	х	N	Х	Х	х	Ammonium Phosphate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acetylene Tetrachloride	Х	X	N	N	Х	N	Х	X	Х	Ammonium Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acrolein (hydroquinine inhibited)	N	N	N	N	G	N	Х	Е	Е	Ammonium Sulfide	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acrylamide	N	N	N	Х	N	N	Х	Е	Е	Ammonium Sulfite	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acrylates (HEA or HPA)	N	N	N	N	N	N	Х	Е	Е	Ammonium Thiocyanate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acrylic Acid	N	N	N	N	N	N	N	N	G	Ammonium Thiosulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Acrylonitrile	G	Х	Х	Х	Х	Х	Х	G	G	Amyl Acetate	С	Х	Х	Х	G	Х	G	Х	Х
Adipic Acid	N	G	G	G	Е	Е	G	N	N	Amyl Acetone	Х	Х	Х	Х	G	Х	G	Е	Е
Aeroshell 7A. 17 Grease	N	N	G	Ε	N	N	Ν	N	N	Amyl Alcohol	Е	Е	Е	Е	Е	Е	Е	Е	Е
Air	Е	Е	Е	Е	Е	Е	Е	Е	Е	Amylamine	С	G	Х	С	G	С	Х	Е	Е
Air, 300° F	Х	Х	Х	Х	N	Х	Х	N	N	Amylbenzene	Х	Х	G	G	Х	N	Х	G	G
Aircraft Hydraulic Oil AA	N	N	N	Е	Х	N	Χ	Е	N	Amyl Borate	Х	Х	С	Е	Е	С	Х	Е	Ε
Alachlor (Lasso)	Е	N	N	N	N	N	Ν	Е	N	Amyl Chloride	Х	Х	X	Х	Х	Х	Х	Е	Е
Alcohols, Aliphatic	Е	G	Е	Е	Е	Е	Е	Е	E	Amyl Chloronapthalene	Х	Х	Х	G	Х	Х	Х	Е	Е
Alcohols, Aromatic	С	Х	С	С	Х	Х	Х	Е	Е	Amyl Napthalene	Х	X	Х	Х	Х	X	X	Е	Е
Alkaline Liquid (NOS)	N	N	N	N	Е	Е	N	Е	N	Amyl Oleate	Х	Х	Х	Х	G	Х	G	Е	Е
Alk-Tri (Trichloroethylene)	Х	N	N	Х	Х	Х	N	Е	N	Amyl Phenol	Х	Х	Х	Х	Х	Х	Х	Е	Е
Alkyaryl Polyether Alcohol	N	N	N	N	N	N	N	N	E	Amyl Phthalate	Х	N	N	Х	E	Х	N	Е	Е
Alkyaryl Sulfonate Alkybenzene Sulfonate	E	N	N	Е	N	Х	N	Е	Е	Anethole	Х	Х	Х	Х	Х	Х	Х	G	G
Allyll Alcohol	Е	G	Е	Е	Е	Е	Е	Е	Е	Anhydrous Ammonia	Х	Х	Х	Х	Х	Х	Х	Х	Х
Allyl Bromide	Х	X	Х	Х	Х	Х	Х	G	G	Aniline	Х	Х	X	Х	Е	Х	С	Е	Е
Allyl Chloride	Х	X	Х	Х	Х	Х	Х	G	G	Aniline Dyes	С	С	С	С	G	С	G	Е	Ε
Alpha Methylstyrene	X	X	X	X	X	N	X	G	G	Aniline Hydrochloride	E	С	X	С	С	X	G	E	E
Alpha Olefin Sulfonate	E	N	N	N	N	N	N	N	N	Animal Fats	X	X	G	E	G	F	С	Ε	E
Alum (Ammonium Potassium Sulfate)	E	E	E	E	E	E	E	E	E	Animal Gelatin	N	N	E	Е	N	N	N	N	E
Aluminum	E	E	Ε	Ε	Ε	Ε	Ε	Ε	Ε	Animal Grease	X	X	G	G	С	С	G	E	E
Aluminum Acetate	E	E	N	N	N	N	N	N	N	Animal Oils	X	X	X	E	G	X	С	E	E
Aluminum Alkyl	X	X	X	X	X	X	X	X	X	Ansul Ether	X	X	X	С	С	X	С	E	E
Aluminum Bromide	E	E	E	E	E	E	E	E	N	Antifreeze (Ethylene Glycol)	E	E	E	E	E	E	E	E	E
Aluminum Chloride	E	E	E	E	E	E	E	E	E	Antimony Trichloride	X	X	G	G	E	G	G	E	G
Aluminum Chlorohydrate Solution (to 50%)	N	N	N	E	E	N	E	E	E	Ant Oil (Furfural)	X	X	G	X	X	G	X	E	N
Aluminum Flouride	E	E	E	E	E	E	E	E	E	Antimony Pentachloride	X	X	X	X	С	X	С	G	G
Aluminum Formate	X	N	N	X	G	X	N	E	E	Antimony Salts	N	N	N	G	E	N	E	E	N
Aluminum Hydroxide	E	E	E	E	E	G	E	E	E	Aqua Ammonia	G	G	G	G	G	E	E	E	E
Aluminum Nitrate	E	Е	Е	Е	Е	Е	Е	Е	Е	Aqua Regia	Х	X	Х	Х	Х	С	С	Χ	G

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Г.	R	R	R	R	R	M	М	E	E	ı		R	R	R	R	R	M	М	E	E	ı
Argon	X	Х	X	С	G	Х	E	N	N		Bromine	Х	Х	Х	Х	Х	С	Х	X	X	ì
Arguad	E	E	E	E	E	E	E	E	E		Bromine Water	X	X	G	C	С	E	С	E	E	ı
Aromatic Hydrocarbons	X	X	X	С	X	X	X	E	E		Bromobenzene	X	X	X	X	X	X	X	С	С	ı
Aromatic Tar	X	N	N	X	X	X	X	E	E		Bromochloroethane	X	X	N	N	X	X	X	X	X	ì
Arsenic Acid	E	E	E	E	E	E	E	E	E		Bromochloromethane	X	X	X	X	X	X	X	X	X	ì
Arsenic Chloride	X	X	E	С	X	X	G	X	X		Bromotoluene	X	X	N	N	X	N	X	N	N	ì
Arsenic Trichloride	X	X	E	С	X	X	G	X	X		Bubble Bath Compounds	N	N	N	N	N	N	N	N	E	ì
Asphalt	X	X	G	E	X	X	G	G	G		Bunker Oil	X	X	G	E	X	X	X	E	E	ì
ASTM Fuel A	X	X	E	E	X	G	X	N	N		Butadiene	X	X	F	X	X	С	X	F	F	ì
ASTM Fuel B	X	X	X	E	X	X	X	N	N		Butandiol (Butylene Glycol)	N	N	N	N	N	N	N	E	G	1
ASTM Fuel C	X	X	X	G	X	X	X	N	N		Butane	X	X	E	E	E	G	X	E	N	1
ASTM Oil No. 1	X	X	E	E	X	G	X	E	E		Butanoic Acid	N	N	N	N	N	N	N	N	N	1
ASTM Oil No. 2	X	X	G	E	X	F	X	E	E		Butanol  Butanol  Chutanol	E	E	E	E	E	E	E	E	E	ì
ASTM Oil No. 3	X	X	G	E	X	F	X	E	E		Butraldehyde (Butanal)	X	X	X	X	X	X	X	G	N	1
ASTM Oil No. 4	X	X	X	G	X	X	X	N	N		Butter (Non FDA)	C	C	G	E	E	E	G	E	E	1
Automatic Trans. Fluid Aviation Gasoline	X	X	G C	E	X	C	X	N E	N		Butyl Acetate  Butyl Acetagostate	X	X	X	X	G	X	C	G	G E	ì
	X	X		E	X	X	X		E		Butyl Acetoacetate	X	N	N	X	X	X	N	E		ì
Baltic Types 100, 150, 200, 300, 500	N	N	N	E	X	N	X	E	N		Butyl Acrylate	X	X	X	X	X	X	X	G	G	1
Bardol B	X	X	X	X	X	X	X	E	N		Butyl Aldahada	E	E	E	E	E	E	E	E	E	1
Barium Carbonate	E	E	E	E	E	E	E	E	E		Butyl Aldehyde	X	N	N	X	X	X	X	E	E	ì
Barium Chloride	E	E	E	E	E	E	E	E	E		Butylamine	G	C	X	C	C	C	C	E	E	1
Barium Hydroxide	E	E	E	E	E	E	E	E	E		Butyl Benzene	X	X	X	X	X	X	X	E	E	1
Barium Sulfate Barium Sulfide	E	E	E	E	E E	E	E E	E	E		Butyl Benzyl Phthalate (BBP)	X	N	N	X	E	X	N	N G	N G	ì
	X	E	E			X					Butyl Bromide	X	X	X	X	X C	X	X G	G	G	1
BBP (Butyl Benzyl Phthalate)		N	N	X	E		N	N	N		Butyl Butyrate	X	X				X				ì
Beer Sugar Liguera	E	E	G E	C E	E E	E	G E	N E	N E		Butyl Carbitol Butyl Cellosolve	X	X	G G	G	E E	E G	E E	E E	E E	1
Beet Sugar Liquors Bellows 80-20 Hydraulic Oil	N	N	N	E	X	N	X	E	N		Butyl Chloride	X	X	X	X	С	X	С	G	G	ì
·	X	N	N	X	G	X	G	E	E		Butylate	N	N	N	N	N	N	E		E	ì
Benzaldehyde Benzal Chloride	N	N	N	X	G	N	N	E	E		Butylene	X	X	G	G	C	G	С	N E	E	ì
Benzene (Benzol)	X	X	X	X	X	X	X	E	G		Butyl Ether	X	X	G	G	С	G	С	E	E	1
Benzene Sulfonic Acid	X	X	X	N	G	G	N	E	E		Butyl Ethyl Acetaldehyde			X	X	С	X	X	E	E	ì
Benzidine	E	X	X	G	X	N	X	G	N		Butyl Ethyl Ether	X	X	X	X	С	G	c	E	E	1
Benzine	X	X	G	E	X	X	X	E	E		Butyl Formate	X	N	X	X	N	N	N	N	N	ì
Benzene Solvent (Ligroin)	X	N	N	E	X	X	X	E	E		Butyl Mercaptan (2-Methyl - 2 Butanathiol)	X	X	N	X	X	N	X	E	N	1
Benzoic Acid	G	X	E	X	E	G	G	E	E		Butyl Oleate	X	X	X	X	G	X	G	E	E	ì
Benzoic Aldehyde	Х	X	X	X	X	Х	Х	E	E		Butyl "Oxiol" tm for EG Monobutyl Ether	N	N	N	N	N	N	E	E	N	1
Benzophenone	E	N	N	N	N	N	N	E	N		Butyl Phthalate	X	X	X	X	С	X	С	E	E	ì
Benzotrichloride	X	X	Х	Х	X	X	X	G	G		Butyl Stearate	X	X	X	G	С	X	С	E	E	1
Benzoyl Chloride	X	X	X	X	X	X	X	G	G		Butylene Glycol	N	N	N	N	N	N	N	E	G	ì
Benzyl Acetate	X	X	X	X	G	G	G	E	E		Butyraldehyde	Х	N	N	Х	G	X	Х	E	E	ì
Benzyl Alcohol	G	G	C	X	G	F	G	E	E		Butyric Acid	G	G	X	N	G	X	G	E	E	ì
Benzyl Benzoate	N	N	N	N	G	N	G	E	N		Butyric Anhydride	С	Х	Х	С	С	G	С	E	E	ì
Benzyl Chloride	X	Х	Х	Х	С	Х	X	Е	Е		Cadmium Acetate	X	N	N	X	G	N	N	N	N	1
Bichromate of Soda	Х	Х	G	Х	E	G	С	E	E		Calcine Liquor (Radioactive Waste)	N	N	N	Е	E	N	Е	Е	N	ì
(Sodium Dichromate)					_	_	_				Calcium Acetate	С	X	X	X	E	X	E	E	Е	1
Bismuth Carbonate	Е	N	Х	N	N	N	N	N	N		Calcium Aluminate	E	N	Е	Е	E	Е	N	N	N	ì
Bisphenol A	E	N	N	N	N	N	N	N	N		Calcium Aresenate	N	N	N	N	N	N	N	Е	N	ì
Bitumastic	X	Х	G	G	X	Х	X	N	X		Calcium Bisulfate	E	E	E	E	E	E	E	E	E	ì
Black Sulfate Liquor	G	G	E	G	E	G	E	E	E		Calcium Bisulfide	G	G	E	E	E	E	N	E	N	ı
Blast Furnace Gas	X	X	G	С	С	G	С	E	E		Calcium Bisufite	С	E	E	E	G	E	С	E	E	ı
Bleach	X	X	С	Х	Х	F	G	E	E		Calcium Bromide Solution	N	N	N	N	N	N	N	E	E	ı
Borax Solution	G	G	E	C	E	E	E	E	E		Calcium Bichromate	N	N	N	N	E	F	N	G	F	ı
Bordeaux Mixture	G	G	E	E	E	E	E	E	E		Calcium Carbonate	E	E	E	E	E	E	E	E	E	ì
Boric Acid	E	E	E	E	E	Е	E	E	E		Calcium Chlorate	G	G	E	E	G	E	G	E	N	ı
Brake Fluid (HD-557)	N	E	G	С	G	G	E	N	N		Calcium Chloride	E	E	E	E	E	E	E	E	E	ì
Brine	E	E	E	E	E	E	E	E	E		Calcium Hydroxide	E	G	E	E	E	G	E	E	E	ı
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Only in the deposit of	R	R	R	R	R	M	M	E	E	Г Г	Old and forms	R	R	R	R	R	M	M	E	E
Calcium Hydrosulfide	G	G	E	E	E	E	N	E	N		Chloroform	X	X	X	X	X	X	X	G	G
Calcium Hypochlorite	X	X	X	X	G	F	G	G	G		Chloronapthalene	X	X	X	X	X	X	X	N	N
Calcium Metasilicate	E	G	N	G	G	G	N	N	N		Chloronated Hydrocarbons	X	X	X	X	X	X	X	G	G
Calcium Nitrate	E	E	E	E G	E G	E	E	E	E		Chloropentane	X	X	C	X	X	X	X	E G	E G
Calcium Silicate Calcium Stearate	E	G N	N N		N	G N	N	N	N N		Chlorophenol Chloropropanone	×	X	X	X	X C	X	X C	G	G
Calcium Sulfate	E	E	E	N E	E	E	N E	E	E		Chlorosulfonic Acid	X	X	X	X	X	C	X	G	G
Calcium Sulfhydrate	E	E	E	E	E	E	E	E	E		Chlorothene (Trichloroethane)	X	X	X	X	X	X	X	G	G
Calcium Sulfide	E	E	E	E	E	E	E	E	E		Chlorotoluene	X	X	X	X	X	X	X	G	G
Calcium Sulfite	E	E	E	E	E	E	E	E	E		Chlorox	G	G	G	N	G	G	N	G	E
Caliche Liquor	E	E	G	С	E	E	E	E	E		Chlorpyrifos	N	N	N	N	N	N	Х	N	N
(Crude Sodium Nitrate)		_			_	_	_	_	_		Chrome Alum	E	E	E	E	Е	E	E	N	N
Camphene (Liquid above 115° F)	N	N	N	N	N	Х	Х	N	N		Chrome Plating Solutions	X	X	X	X	X	X	G	N	N
Cane Sugar Liquors (Non F.D.A.)	E	E	E	Е	E	E	E	E	E		Chromic Acid	X	X	X	X	X	E	С	E	E
Caproic Acid	N	N	N	N	N	N	G	E	E		Citgo FR Fuels	N	N	Х	E	E	N	N	E	N
Caprolactam	E	N	N	N	N	N	N	N	N		Citric Acid	Е	Е	G	G	E	E	Е	E	E
Caprylic Acid	×	N	N	Х	G	G	N	Е	E		Coal Oil	X	X	G	E	X	X	X	E	E
Carbamates	X	X	X	X	X	Х	X	E	N		Coal Tar	X	X	G	E	X	G	G	E	E
Carbitol	X	Х	G	G	E	G	G	E	Е		Coal Tar Naptha	Х	Х	F	E	Х	Х	Х	E	E
Carbitol Acetate	X	X	X	Х	G	Х	G	Е	Е		Coal Tar Pitch	Х	Х	G	G	х	G	Х	N	N
Carbolic Acid (Phenol)	х	x	С	Х	G	С	С	Е	E		Cobalt Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е
Carbon Bisulfide	N	N	N	N	N	N	N	N	N		Coconut Oil	х	Х	G	Е	G	G	С	Е	Е
(See Carbon Disulfide)											Cod Liver Oil	х	х	G	Е	Е	G	Е	Е	Е
Carbon Dioxide	E	Е	Е	Е	Е	Е	Е	E	Е	(	Coke Oven Gas	Х	Х	Х	Х	F	Х	Х	Е	Е
Carbon Disulfide	X	Х	Х	X	х	Х	Х	Е	С		Copper Arsenate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Carbonic Acid	Е	Е	Е	Е	Е	Е	Е	Е	Е	C	Copper Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е
Carbon Monoxide	Е	Е	Е	Е	Е	Е	Е	Е	Е	d	Copper Cyanide	Е	Е	Е	Е	Е	Е	Е	Е	Е
Carbon Tetrachloride	х	х	х	С	G	х	G	С	С	C	Copper Hydrate	Х	N	N	G	Е	G	N	Е	Е
Carbon Tetrafluoride	X	Х	Х	С	Х	X	X	С	С	C	Copper Hydroxide	F	G	N	N	Е	G	N	Е	Е
Carbonyl Chloride	Х	х	х	х	Е	Х	х	х	х	C	Copper Nitrate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Casein	N	N	N	N	Е	N	N	N	N	C	Copper Nitrite	Е	Е	Е	Е	Е	Е	Е	E	Е
Castor Oil	С	Х	G	Е	G	С	G	Е	Е	(	Copper Sulphate	F	Е	Е	Е	Е	Е	Е	Е	Е
Caustic Potash	Е	G	G	Е	Е	Е	Е	Е	Е	C	Copper Sulphide	С	Е	Е	Е	Е	Е	Е	Е	Е
(Potassium Hydroxide)										(	Corn Oil	X	X	С	Е	Е	G	С	Е	Е
Caustic Soda	Е	G	G	G	Е	G	Е	Е	Е	C	Corn Syrup	G	G	G	G	G	G	G	Е	N
(Sodium Hydroxide)										C	Cottonseed Oil	Х	Х	С	С	С	G	С	С	G
Cellosize	X	N	N	X	Е	Е	Е	Е	Е	C	Creosols	Х	N	N	Х	Е	Х	Х	Е	Е
Cellsolve	Х	Х	Е	G	G	G	G	Е	Е	C	Creosote	Х	N	N	Х	Х	Х	X	Е	Е
Cellulose Acetate	С	X	С	X	G	С	G	G	G	C	Creosote (Wood)	Х	Х	С	G	Х	С	Х	E	Е
Cellulube	С	Х	Х	Х	G	Х	Е	Е	Е	C	Creosote (Coal Tar)	Х	Х	С	G	X	С	Х	Е	Е
Cement, Portland	N	N	N	N	Е	N	N	N	Е		Cresols	Х	Х	С	С	Х	С	Х	Е	Е
China Wood Oil (Tung Oil)	Х	Х	G	Е	G	G	G	E	E	(	Cresylic Acid	Х	Х	С	С	Х	С	X	Е	Е
Chlordane	N	N	Х	X	N	X	X	Е	N		Crotonaldehyde	Х	Х	Х	Х	Е	Х	С	Е	Е
Chlorinated Napthalene	Х	Х	Х	Х	Х	Х	N	N	N		Crotonic Acid	Х	Х	N	G	Е	N	G	E	E
Chlorinated Solvents	X	Х	N	N	Х	X	X	Х	Х		Crude Oil	Х	Х	F	Е	Х	Х	Х	Е	Е
Chlorine Dioxide	Х	Х	Х	Х	Х	С	Х	G	G		Crude Wax	N	N	N	G	G	N	N	G	N
Chlorine Gas (Dry)	С	С	X	С	С	G	С	G	G		Cyrolite	Х	Х	G	E	Х	Х	Х	N	N
Chlorine Trifluoride	N	N	N	N	N	N	X	N	N		Cumene	X	X	X	С	С	X	X	E	E
Chlorine, Water Solutions (2%)	С	X	X	X	С	G	С	E	E		Cupric Arsenate	G	G	N	N	N	G	N	E	N
Chloroacetic Acid	G	X	X	X	С	X	C	E	E		Cupric Carbonate	С	С	G	G	Е	G	E	E	E
Chloroacetone	X	X	X	X	G	G	X	E	E		Cupric Chloride	С	С	G	E	E	E	E	E	E
Chlorobenzene	X	X	X	X	X	X	X	G	G		Cupric Cyanide	G	G	G	G	G	G	G	E	N
Chlorobenzol	X	N	N	X	X	X	X	E	E		Cupric Hydroxide	N	N	N	N	N	N	N	N	N
Chlorobromomethane	X	X	X	X	X	X	X	G	X		Cupric Nitrate	С	С	G	E	E	E	E	E	E
Chlorobutane	X	X	X	X	X	X	X	G	G		Cupric Nitrite	С	С	G	E	E	E	E	E	E
Chlorobutadiene	X	X	X	X	X	X	X	G	G		Cupric Sulfate	F	Е	G	Е	Е	Е	Е	Е	Е
Chloroethylbenzene	X	Χ	Χ	X	Χ	Χ	Χ	Е	Е	ı L										ш

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	N	В	С	В	ı	S	D	Р	Р			N	В	С	В	I	s	D	Р	Р
	R	R	R	R	R	М	М	E	E	1		R	R	R	R	R	M	М	Е	E
Cutting Oil	X	X	G	E	Х	X	X	G	N		Dichloroisopropyl Ether	X	X	X	X	X	X	X	Ε	E
Cutting Oil (Sulfur Base)	N	N	X	E	N	N	N	N	N		Dichloromethane	X	X	X	X	X	X	X	E	E
Cutting Oil (Water Solutions)	N	N	X	E	N	N	N	N	N		Dichloropentane	X	X	X	X	X	X	X	E	E
Cyanisde, Copper	G	G	G	G	G	G	G	E	N		Dichloropropane	X	X	N	N	X	X	N	Ε	E
Cyanide Mercuric	G	G	E	G	G	E	G	E	N		Dichlorotoluene	N	N	N	N	N	N	N	N	N
Cyanide, Silver	N	N	E	N	N	N	N	E	N		Dicyclohexylamine	N	N	N	N	N	N	N	N	N
Cyanide, Sodium	E	E	E	E	E	E	E	E	N		DIDA (Diisodecyl Adipate)	X	N	N	X	E	X	N	N	N
Cyclohexane	X	X	X	G	X	X	X	E	E		Dieldrin Xylene	X	X	X	X	X	X	X	E	E
Cyclohexanol	X	X	G	С	X	X	Х	E	E _		Dieidrin in Xylene	Х	Х	G	G	Х	Х	Х	Е	Е
Cyclohexanone	Х	Х	Х	Х	Х	Х	Х	Е	Е		And Water Spray									
Cyclohexlamine	N	Х	N	N	E	N	Е	N	N		Diesel Fuel	Х	Х	G	Е	Х	Х	Х	Е	Е
Cyclopentane	Х	Х	G	G	Х	Х	Х	Е	Е		Diesel Oil	Х	Х	G	Е	Х	С	Х	Е	Е
Cyclopentanol	Х	Х	N	N	Х	Х	N	Е	E		Diethanol Amine	G	G	G	G	Е	F	F	Е	Е
Cyclopentanone	Х	N	N	Х	Х	Х	N	N	N		Diethyl Benzene	Х	Х	X	Х	Х	Х	Х	Е	Е
P-Cymene	Х	Х	Х	С	Х	Х	Х	Е	E		Diethyl Carbonal	Е	N	N	Е	Е	Е	N	Е	Е
DDT in Kerosene	Х	Х	G	Е	F	Х	Х	Е	Е		Diethyl Ether	Х	Х	С	G	Х	Х	Х	Е	Е
Decaline	Х	Х	Х	Х	Х	Х	Х	Е	E		Diethyl Ketone	F	Х	N	N	G	Х	N	E	E
Decanal	Х	N	N	Х	Х	Х	N	N	N		Diethylphthalate	Х	Х	Х	Х	Е	Х	G	Е	E
Decanol	Х	N	Х	E	Х	G	Ν	N	N		Diethyl Oxalate	С	Х	Х	Х	С	Х	Е	Е	E
Decane	Х	Х	Х	G	Х	Х	Х	Е	Е		Diethyl Sebacate	Х	Х	Х	Х	Е	Х	С	Е	E
Decyl Alcohol	Х	N	N	E	Е	Е	Е	Е	E		Diethyl Sulfate	Х	Х	Х	Х	G	Х	G	Е	E
Decyl Aldehyde	Х	N	N	Х	Х	Х	N	N	N		Diethyl Sulfide	N	N	N	N	N	N	N	Е	N
Decyl Butyl Phthalate	Х	N	N	Х	Е	Х	N	Е	Е		Diethyl Triamine	G	С	G	G	Е	С	G	Е	E
Deicing Fluid	N	N	Е	Е	Е	G	Е	Е	Е		Diethylacetaldehyde	N	N	N	N	N	N	N	Е	N
Denatured Alcohol	Е	Е	E	Е	Е	Е	Е	Е	Е		Diethylamine	N	N	N	N	N	N	N	N	G
Detergent, Water Solutions	G	G	G	Е	G	G	Е	Е	Е		Diethylene Dioxide	Х	Х	Х	Х	G	Х	G	Е	N
Developing Fluid (plctures)	Е	G	Е	E	Е	Е	G	N	N		Diethylene Glycol	Е	Е	Е	Е	Е	Е	Е	Е	E
Dextrin	N	N	Е	Е	Х	N	Х	X	N		Diethylene Glycol Methyl Ether	N	N	N	N	N	N	Е	Е	N
Dextron	N	N	N	Е	Х	N	Х	X	N		Diethylene Glycol Monobutyl Ether	N	N	N	N	N	N	Е	Е	N
DHSO Butylene	Х	Х	Х	G	Х	Х	Х	Е	N		Diethylene Glycol Monobutyl Ether Acetate	N	N	N	N	N	N	Е	Е	N
Diacetone Alcohol	Х	Х	G	Х	Е	G	G	Е	E		Diethylenetriamine	G	G	С	G	Е	С	Е	Е	E
Diammonium Phosphate	N	N	N	N	N	N	N	N	N		Dihydroxyacetone	N	N	N	N	N	N	Е	Е	N
Diamylamine	G	С	E	G	Е	С	С	Е	Е		Dihydroxydiethyl Ether	Е	Е	Е	Е	Е	N	Е	Е	E
Diamyl Naphthalene	Х	Х	N	N	Х	Х	N	Е	N		Dihydroxyethyl Amine	G	С	G	G	Е	С	G	Е	E
Diamyl Phenol	Х	N	N	Х	Х	Х	Х	Е	Е		Dihydroxyethyl Ether	Е	Е	G	Е	Е	Е	G	Е	E
Diamylene	Х	N	N	Х	Х	Х	N	Е	Е		Diisobutylene	Х	Х	G	Е	Х	Х	X	Е	E
Diazonin	Е	E	N	N	N	N	Е	N	N		Diisobutyl Ketone	Х	Х	Х	Х	G	Х	G	Е	E
Dibenzyl Ether	Х	Х	Х	Х	G	Х	Х	Е	E		Diisobutyl Phenol	Е	N	N	N	N	N	N	N	N
Dibenzyl Sebacate	С	Х	Х	Х	G	Х	G	Е	E		Diisocyanate	Х	Х	Х	Х	Х	Х	Х	Х	Х
Dibromobenzene	Х	Х	Х	Х	Х	Х	Х	G	G		Diisoctyl Phthalate	Х	N	N	Х	Е	Х	Е	N	N
Dibromomethane	Х	Х	Х	Х	Х	Х	Х	G	G		Diisoctyl Adipate	Х	N	N	Х	Е	Х	N	Е	E
Dibutyl Ether	Х	Х	Х	Х	Х	Х	С	Е	Е		Diisodecyl Adipate	Х	Х	Е	Х	Х	С	Е	Е	E
Dibutylamine	G	F	G	Е	F	F	G	Е	Е		Diisodecyl Phthalate	Х	Х	Х	Х	Е	С	Е	Е	E
Dybutylphthalate	Х	Х	Х	Х	G	Х	Е	Е	Е		Diisooctyl Adipate	Х	Х	Х	Х	Е	Х	Е	Е	E
Dibutyl Sebacate	Х	Х	Х	Х	G	Х	G	G	G		Diisooctyl Phthalate	Х	Х	Х	Х	Е	С	Е	Е	E
Dicalcium Phophate	Е	E	E	Е	E	Е	Е	Е	Е		Diisopropanolamine	G	N	N	G	Е	N	N	Ν	N
Dicamba	N	N	N	N	N	N	Е	Е	Е		Diisopropyl Benzene	Х	Х	Х	С	Х	Х	Х	Е	E
Dichloroacetic Acid	X	N	N	Х	Х	Х	Х	Е	Е		Diisopropyl Ether	Х	X	Х	G	X	Х	X	Е	E
Dichloroaniline	N	Х	Х	Х	Х	N	Х	N	N		Diisopropyl Ketone	Х	Х	Х	Х	Е	Х	Е	Е	E
Dichlorobenzene	Χ	Х	Х	Х	Х	Х	Х	G	G		Diisopropylidene Acetone	Х	X	Х	Х	G	Х	G	Е	N
Dichlorobenzyl	Х	Х	Х	Х	х	Х	Х	G	N		Dilauryl Ether	Х	Х	Х	С	Х	С	Х	Ε	Е
Dichlorobutane	Χ	Х	Х	Х	X	Х	Х	Е	Е		Dimethyl Aniline	Х	Х	Х	X	G	Х	Χ	Е	N
Dichlorodifluorometh	Х	Х	Е	G	х	Х	Х	Е	Е		Dimethyl Benzene	Х	N	N	Х	Х	Х	Х	Е	Е
Dichloroethane	Χ	Х	Х	Х	С	Х	Х	Е	С		Dimethyl Carbonal	Е	N	N	Е	Е	Е	Е	Е	Е
Dichloroethyl Ether	Х	Х	Х	Х	х	Х	Х	Е	Е		Dimethyl Ether	Х	Х	Х	Х	G	Х	Е	Е	Е
Dichloroethylene	Χ	Х	Х	Х	С	Χ	Χ	Е	Х		Dimethyl Formamide	N	N	N	Ν	N	Ν	G	Е	N
Dichlorohexane	Χ	Χ	Х	Х	Х	Χ	Χ	Е	Е		Dimethyl Ketone	G	F	F	Х	Е	F	Е	Е	Е

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	N R	B R	C R	R	I R	S M	D M	E	E		N R	B R	C R	B R	R	S M	D M	E	P E
Dimethyl Phenol	X	N	N	X	X	X	X	E	E	Ethyl Aldehyde	F	N	N	N	E	E	N	E	E
Dimethyl Phthalate	X	Х	X	X	E	X	G	E	E	Ethyl Aluminum Dichloride 90°F	X	N	N	X	X	X	N	N	N
Dimethyl Sulfate	X	X	X	X	G	X	X	E	E	Ethyl Benzene	X	X	Х	F	X	X	X	G	G
Dimethyl Sulfide	X	X	X	X	С	X	X	G	G	Ethyl Benzoate	X	X	C	G	G	C	G	E	E
Dimethyl Terephthalate	N	X	X	Х	Х	N	N	N	N	Ethyl Bromide	X	X	Х	Х	Х	Х	Х	G	N
Dimethylamine	G	F	G	G	E	F	E	E	E	Ethyl Butanol	E	E	E	E	E	E	E	E	E
Dimethylaminoethanol	N	N	N	N	N	N	G	E	N	Ethyl Butyrate	X	X	X	X	G	N	N	E	N
Dimethylaniline	Х	Х	Х	Х	Х	Х	С	G	G	Ethyl Butyl Acetate	X	N	N	Х	E	G	N	E	Е
Dimethylbenzene	X	Х	Х	Х	X	Х	X	E	E	Ethyl Butyl Alcohol	Е	Е	E	Е	E	E	Е	E	Е
Dimethylcarbinol	G	G	G	Е	Е	G	Е	Е	Е	Ethyl Butyl Amine	G	С	G	G	Е	С	G	Е	Е
Dimethylformamide (DMF)	С	С	С	X	С	С	С	E	E	Ethyl Butyl Ketone	X	Х	X	Х	G	Х	G	E	Е
DMP (Dimethylaminoethyl Phenol)	N	N	N	N	N	N	N	E	N	Ethyl Butyraldehyde	X	N	N	Х	G	Х	N	E	E
Dinitrobenzene	Х	Χ	С	Х	С	Х	С	Е	Е	Ethyl Cellulose	G	G	G	G	G	G	G	Е	Е
Dinitrotoluene	х	Х	Х	Х	Х	Х	Х	Е	Е	Ethyl Chloride	F	F	F	F	Х	Х	Х	Е	G
Dioctyl Adipate (DOA)	Х	Χ	Х	Χ	Е	Χ	G	Е	Е	Ethyl Chloroformate	N	N	N	Х	N	N	Х	G	G
Dioctylamine	G	G	Х	G	Е	С	G	Е	Е	Ethyl Dichloride	X	Х	Х	Х	Х	Х	Х	G	G
Dioctyl Phosphite	N	N	N	N	N	N	Х	Е	N	Ethylene	х	Х	G	Е	Х	С	Х	Е	Е
Dioctyl Phthalate (DOP)	х	Х	Х	Х	G	Х	G	Е	Е	Ethyl Ether	X	Х	Х	С	С	Χ	Х	Е	Е
Dioctyl Sebacate (DOS)	Х	Х	Х	Χ	G	Χ	G	Е	Е	Ethyl Ether Acetate	N	N	N	Х	N	N	G	Е	N
Dioxane	Х	Х	Х	Х	G	Х	G	Е	Е	Ethyl Formate	X	N	N	Х	G	Х	G	Е	Е
Dioxolane	Х	Х	Х	Χ	С	Χ	G	Е	Е	Ethyl Hexoic Acid	х	N	N	Х	Х	G	N	Е	Е
Dipentene	Х	Х	N	Χ	N	N	Х	G	N	Ethyl Hexyl Acetate	Х	N	N	Х	Е	G	N	Е	Е
Dipentene (Limonene)	Х	Х	Х	Χ	С	Χ	Х	Е	Е	Ethyl lodine	х	N	Х	Х	Х	Х	Х	N	N
Diphenyl (Biphenyl)	Х	Х	Х	Х	х	Х	Х	Е	Е	Ethyl Isobutyl Ether	Х	N	N	G	Х	G	Х	Е	Е
Diphenyl Oxide (Phenyl Ether)	Х	Х	Х	Χ	Х	С	Х	Е	Е	Ethyl Isobutyrate	х	N	Х	Х	Х	N	Х	Е	N
Diphenyl Phthalate	Х	N	N	Χ	Е	Χ	N	Е	Е	Ethyl Mercaptan	Х	Х	Х	Х	Х	Х	Х	Е	N
Dipropylene Glycol	Е	N	N	Е	Е	N	N	Е	Е	Ethyl Pentachlorobenzene	х	Х	Х	Х	Х	Х	Х	Е	N
Dipropyl Ketone	Х	Х	Х	Χ	G	Χ	G	Е	Е	Ethyl Phthalate	Х	Х	N	Х	G	N	N	Е	N
Dipropylamine	G	G	G	G	Е	С	Е	Е	Е	Ethyl Propionate	х	N	Х	Х	Х	N	Х	N	N
Dirco Oils	N	N	N	Е	Х	N	Х	Е	N	Ethyl Silicate	G	G	Е	Е	N	N	G	Е	N
Disodium Phosphate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Ethylamine	F	F	N	N	G	F	N	N	Е
Distillate Fuel Oil	N	N	N	N	N	N	Х	G	N	Ethylbutanol	N	N	Е	Е	Е	G	Е	Е	Е
Divinyl Benzene	Х	Х	Х	Χ	Х	Χ	Х	Е	Е	Ethylene Bromide	х	Х	Х	Х	Х	Х	Х	G	G
Dodecyl Benzene	Х	Х	Х	Х	Х	Х	Х	Е	Е	Ethylene Chloride	Х	Х	Х	Х	Х	Х	Х	G	G
Dodecylphenol	N	N	N	N	N	N	Е	Е	N	Ethylene Chlorohydrin	N	N	Х	Х	G	N	Х	Е	N
Dodecyl Toluene	Х	Х	Х	Χ	Х	Χ	Х	Е	Е	Ethylene Diamine	G	G	Е	Е	Ε	F	Е	Е	Е
Dolomite	N	N	Е	N	N	Е	G	N	N	Ethylene Dibromide	х	Х	Х	Х	Х	Х	Х	G	F
Dowfume W 40, 100%	Х	Х	С	Χ	Х	С	С	G	G	Ethylene Dichloride	Х	Х	Х	Х	Х	Х	Х	G	G
Dow-Per (perchloroethylene)	Х	Х	Х	С	Х	Χ	Х	Е	Е	Ethylene Glycol	Е	Е	Е	Е	Е	Е	Е	Е	Е
Dowtherm Oil, A and E	Х	Х	Х	Χ	Х	С	Х	Е	Е	Ethylene Glycol Monoethylether	N	N	N	N	N	N	Е	Е	N
Dowtherm S. R. I.	Е	Е	Е	Е	Е	Е	Е	Е	Е	Ethylene Glycol Monoethylether Acetate	N	Ν	Ν	N	N	Ν	Е	Е	N
Dry Cleaning Fluids	Х	Х	Х	С	Х	Χ	Х	Ε	G	Ethylene Glycol Monomethyl Ether	N	N	N	N	N	N	Е	Е	N
Duro Oils	N	N	N	Е	Х	N	Х	Е	N	Ethylene Glycol N-Butyl Ether	N	N	N	N	N	N	Е	Е	N
EDTA (Ethylenediaminetetraacetic Acid)	N	N	N	N	N	N	Е	Е	Ν	Ethylene Oxide	Х	Х	Χ	Х	Х	Χ	С	С	С
Emulsion (Oil in Water)	N	N	N	N	N	N	Е	Е	Е	Ethylenediaminetetraacetic Acid (EDTA)	N	N	N	N	N	N	Е	Е	N
Enamels	Ν	N	N	N	N	N	Х	Е	N	Ethylene Trichloride (trichloroethylene)	Х	Х	Х	Х	С	Х	Х	G	G
Epichlorohydrin	Х	Х	Х	Χ	С	С	G	G	G	Ethyl Formate	Х	Х	Х	Х	G	Х	С	Е	Е
Epoxy Resin	Ν	N	Е	N	G	N	Е	N	N	Ethyl Hexanol	Е	Ε	Е	Е	Е	Ε	Ε	Е	Е
Essential Oils	Х	Х	G	Е	N	N	Х	G	N	Ethyl Methyl Ketone	С	Х	Х	Х	G	Х	G	Е	Е
Ethanoic Acid	N	N	N	N	N	N	Ν	N	N	Ethyl Oxalate	Е	Ε	Х	Х	Е	Х	G	Е	Е
Ethanol (Grain Alcohol)	Х	Χ	Χ	Χ	Х	Χ	Х	N	G	Ethyl Propyl Ether	Х	Х	Х	Х	х	Х	х	Е	Е
Ethanolamine	G	G	G	G	Е	С	Е	С	Е	Ethyl Propyl Ketone	Х	Χ	Χ	Х	G	Χ	G	Е	Е
Ethers	Х	Χ	Х	Χ	F	F	С	Е	Е	Ethyl Sulfate	Х	Х	Х	Х	G	Х	G	Е	Е
Ethyl Acetate	Х	Х	Х	Χ	G	Х	С	Е	Е	Ethylhexanediol	N	N	N	N	N	N	G	Е	N
Ethyl Acetoacetate	Х	Χ	Х	Χ	G	Χ	G	Е	Е	Ethylhexoic Acid	N	N	N	N	N	N	G	Е	N
Ethyl Acrylate	Х	Х	Х	Х	С	Х	Х	G	G	Ethylhexyl Acetate	N	N	Х	Х	N	Х	Е	Е	N
Ethyl Alcohol	Χ	Χ	Χ	Χ	Χ	Χ	Χ	N	G	Ethylhexyl Acrylate	N	N	N	Х	N	N	N	G	N

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Ethylhovyl Alachal	R	R	R	R	R	M	M	E	E	Euol C (ACTM)	R	R	R	R	R	M	M	E
Ethylhexyl Alcohol Ethylhexyl Phosphorodieth	E	E N	E N	N E	E X	N X	E X	E	E N	Fuel C (ASTM) Fuel Oil	X	X	C G	G E	X	X E	X	G E
EX. TRI (Trichloroethylene)	X	X	X	С	X	X	X	G	G	Fumaric Acid	E	E	G	E	X	G	X	E
Fatty Acids	X	X	C	С	X	X	X	E	E	Furan	X	X	X	X	C	X	C	E
Fatty Alcohol, Blend	Е	Е	E	E	Е	N	Е	E	E	Furfural	Х	Х	С	Х	G	G	G	E
Fatty Petroleum Alcohol	N	N	N	Е	Е	N	Е	Е	Е	Furfuryl Alcohol	X	Х	С	Х	С	С	С	Е
Ferric Bromide	Е	N	N	N	N	N	N	N	N	Fyrguard 150, 200	N	N	N	Е	Е	N	Е	Е
Ferric Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е	Fyrquel 15R & O, 220 R&O, 550R&O	N	N	N	Е	Е	N	Е	Е
Ferric Nitrate	N	N	G	G	G	G	G	Е	N	Fyrquel 90, 150, 220, 550, 1000	N	N	N	Е	Е	N	Е	Е
Ferric Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Gallic Acid	Е	Е	G	G	G	G	G	Е
Ferrous Acetate	Х	Х	Х	Х	Е	Х	G	Е	Е	Gasohol	Х	Х	G	G	Х	Х	Х	G
Ferrous Ammonium Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Gasoline (oxgenated-blended with MTBE)	Х	Х	G	G	Х	Х	Χ	G
Ferrous Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е	Gasoline - Regular	Х	Х	Е	Е	Х	С	Х	Е
Ferrous Hydroxide	G	С	Е	G	Е	G	Е	Е	Е	Gasoline - Hi-Test	Χ	Х	G	Е	Х	Χ	Х	Е
Ferrous Nitrate	N	N	G	G	G	G	G	Е	N	Gasoline - Lead Free	Х	Х	G	G	Х	Х	Х	Е
Ferrous Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Gasoline (White)	Х	Х	G	G	Х	Χ	Х	G
Fertilizer (Liquid Manure)	Е	Е	Е	Е	Е	Е	Е	Е	Е	Gas, Coal	N	N	N	N	N	N	N	N
Fire-Resistant Hydra-Fluid (Texaco)	N	N	N	Е	Х	N	Х	Е	N	Gas, High Octane	Х	Х	G	Е	Х	Χ	Х	Е
Fish Oil	Х	Х	Е	Е	Е	Е	Е	Е	Е	Gelatin	Е	Е	Е	Е	Е	Е	Е	Е
Fluoroboric Acid	Е	С	G	Е	Е	Е	Е	Е	Е	Glacial Acetic Acid	N	N	Χ	N	Χ	Ν	G	Е
Fluorine	X	Х	Х	Х	Χ	Х	Χ	Х	Х	Glauber's salt	Е	Е	N	Ν	N	Ν	Е	N
Fluosilicic Acid	Е	С	G	Е	Е	Е	E	Е	Е	Gluconic Acid	X	Х	С	С	С	G	С	Е
Formaldehyde	С	С	G	G	Е	С	G	Е	Е	Glucose	Е	Е	G	G	Е	Е	G	Е
Formalin (37-50% HCHO w/15% MeOH)	Х	Х	G	G	G	G	Е	Е	N	Glue	Е	Е	Е	Е	Е	Е	Е	Е
Formamide	Е	Е	Е	Е	Е	Е	Е	Е	Е	Glycerine (Glycerol)	E	E	Е	Е	Е	Е	Е	Е
Formic Acid	G	G	С	Х	E	F	E	С	Е	Glycerol Monolaurate	N	N	N	N	E	N	E	E
FR Fluid D	N	N	N	Ε	X	N	X	Ε	N	Glycol FR Fluids	N	N	N	E	E -	N	E -	N
Freon So 2	N	N	E	N	N	N	E	N	N	Glycols	E	Ε	Ε	E	Ε	Ε	E	Ε
Freon 11	X	X	G	E	X	E	X	E	E	Glyphosate	N	N	N	N	N	N	E	N
Freon 12	X	X	G	G	X	X	X	G	G	Graffinite	X	N	N	E	X	X	X	X
Freon13	E	E	E	E	E	E	E	E	E	Graphite	E	N	N	N	N	N	N	N
Freen 23	X	X	G	X	X	X	X	E	E	Grease	X	X	X G	X	F E	X E	E	G
Freon 22 Freon 31	G	X G	X	E X	E	G	E E	E	E	Green Sulfate Liquor Halium	E	E	E	E	E	Е	E	E N
Freon 32	E	E	E	E	E	E	E	E	E	Halowax Oil	X	X	X	X	X	X	X	E
Freon 112	X	X	G	G	X	G	X	E	E	Heptachlor in Petroleum Solvents	X	X	G	G	X	X	X	E
Freon 113	C	G	E	E	X	E	X	E	E	Heptachlor in Petroleum Solvents	X	X	G	G	X	X	X	E
Freon 114	E	E	E	E	E	E	E	E	E	Water Spray		^		0	^	^	^	-
Freon 115	E	E	E	E	E	E	E	E	E	Heptanal (Heptaldehyde)	Х	Х	Х	Х	Х	Х	G	Е
Freon 142b	E	E	E	E	E	E	E	E	E	Heptane	X	X	E	E	X	G	Х	E
Freon 152b	E	E	E	E	E	С	E	E	E	Heptane Carboxylic Acid	X	N	N	X	X	G	N	E
Freon 218	Е	Е	Е	Е	E	E	E	E	E	Heptanol	Е	Е	Е	Е	Е	E	Е	E
Freon C316	Е	Е	Е	Е	Е	Е	Е	Е	Е	Hexaldehyde	N	N	N	N	N	N	Е	Е
Freon C318	Е	Е	Е	Е	Е	Е	Е	Е	Е	Hexane	Х	х	Е	Е	Х	F	Х	Е
Freon 1381	Е	Е	Е	Е	Е	Е	Е	Е	Е	Hexanol	Е	Е	Е	Е	Е	Е	Е	Е
Freon 114B2	Х	С	Е	G	Х	Е	Х	Е	Е	Hexene	Х	Х	G	G	Х	G	Х	Е
Freon 502	Е	Е	Е	G	Е	Е	Е	Е	Е	Hexylamine	G	С	G	G	G	С	G	Е
Freon TF	С	G	Е	Е	Е	Е	Е	Е	Е	Hexylene	Х	Х	G	Е	Х	Х	С	G
Freon T-WD602	С	G	G	Е	Е	G	G	Е	Е	Hexylene Glycol	Е	Е	Е	Е	Е	Е	Е	Е
Freon TMC	G	С	G	G	G	G	G	Е	Е	Hexyl Methyl Ketone	Х	Х	Х	Х	G	Х	G	Е
Freon T-P35	Е	Е	Е	Е	Е	Е	Е	Е	Е	Hi-Tri (Trichloroethylene)	Χ	Х	Х	С	Х	Χ	Х	G
Freon TA	Е	Е	Е	Е	Е	Е	Е	Е	Е	Honey	Е	N	Е	Е	N	N	Е	N
Freon TC	Х	G	Е	Е	Е	Е	G	Е	Е	Houghto-Safe 1055, 1110, 1115, 1120, 1130	N	N	N	Χ	Е	N	Е	Е
Freon BF	Х	Х	G	G	Х	G	Х	Е	Е	Houghto-Safe 271, 416, 520, 616 & 620	N	N	N	Е	Е	N	Е	Е
Freon MF	X	G	С	Е	Х	G	X	Е	Е	Houghto-Safe 5046	N	N	N	Е	Е	N	Х	Е
Fuel A (ASTM)	Х	Х	G	Е	Х	F	Х	Е	Е	Houghto-Safe 625, 640, & 525 under 100°F	N	N	N	Е	Е	N	Е	Е
Fuel B (ASTM)	X	Χ	F	Е	Χ	Χ	Χ	G	G	Hy-Chock Oil	N	N	N	Е	N	N	N	Е

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	N	В	С	В	1	s 	D	P -	P -			N	В	С	В	1	s 	D	P -	P -
Hydrafluid 760 (Texaco & Houghton)	R	R N	R	R	R X	M N	M	E	E N	1	lachutulana	R	R X	R	R	R E	M	M	E	E
Hydrafluid AZR&O, A, B, AA, C		N N	N	E		N N	X	E	N		Isobutylene	X	X	X	X	X	X	X	E	E
Hydrasol A (Textile Drying)	N N	N	N N	E	X	N	X	E	N		Isobutyl Ether Isocyanates	C	X	X	X	^ G	C	G	G	G
Hydraulic Fluid (Petroleum)	X	X	G	E	X	G	X	E	E		Isooctane	X	X	E	E	X	G	X	E	E
Hydraulic Fluid	X	X	X	X	E	X	E	E	E		Isooctyl Alcohol	N	N	N	N	N	N	E	E	E
Phosphate Ester Based	,		, ,	, ,	_	, ,	_	-	_		Isooctyl Thioglycolate	N	N	N	N	N	N	G	E	N
Hydraulic Fluid	G	G	Е	Е	Е	Е	Е	Е	Е		Isopentane	X	X	Е	Е	Х	X	Х	G	G
Poly Alkylene Glycol Base		_	_		_	_					Isophorone	N	N	N	X	E	N	Е	G	G
Hydraulic & Motor Oil	Х	Х	С	Е	Х	G	Х	Е	Е		Isopropyl Amine	G	Х	Е	С	G	С	G	Е	Е
Hydrazine	Х	Х	Х	Х	G	Х	G	Е	N		Isopropyl Acetate	X	Х	Х	Х	E	С	G	Е	Е
Hydrazine Hydrate	Х	Х	Х	Х	G	Х	G	Е	N		Isopropyl Alcohol (Iso-propanol)	Е	Е	Е	Е	Е	Е	Е	G	G
Hydrazine Solution	Х	X	Х	X	G	Х	G	Е	N		Isopropyl Amine	G	х	Е	С	G	С	G	Е	Е
Hydrobromic Acid	Е	х	х	F	Е	Е	G	Е	Е		Isopropyl Benzene	Х	Х	Х	х	Х	Х	Х	Е	Е
Hydrochloric Acid 37%	Е	Х	Х	Х	F	Х	Х	Е	Е		Isopropyl Chloride	Х	Х	Х	Х	Х	Х	Х	G	G
Hydrochloric Acid 50%	Е	С	Х	Х	G	Е	С	Е	Е		Isopropyl Ether	Х	Х	Х	С	Χ	С	Х	Е	Е
Hydrochloric Acid 100%	G	С	Х	Х	С	G	С	Е	Е		Isopropyl Toluene	Х	Х	Х	Х	Х	Х	Х	Е	Е
Hydrocianic Acid	G	F	Е	F	Е	Е	С	Е	Е		Jet Fuels	Х	X	G	Е	Х	F	Х	Е	Е
Hydro-Drive Oil (Houghton)	N	N	N	Е	Х	N	Х	N	N		Kerosene	Х	х	С	Е	х	F	Х	Е	Е
Hydrofluoric Acid	Х	Х	Х	Х	Е	Е	Х	С	Е		Ketchup	N	N	Е	Е	N	N	N	N	N
Hydrogen Chloride Anhydrous	N	N	N	N	Ν	N	N	N	N		Ketoglutaric Acid	N	N	N	N	Ν	Ν	G	Е	Е
Hydrogen Bromide Liquid	Х	Х	N	Х	Х	N	Е	N	N		Ketones	G	G	Х	Х	G	Х	Е	Е	Е
Hydrogen Dioxide 10%	Х	Х	N	N	F	N	N	N	G		Lacquer	Х	х	Х	х	Х	Х	N	N	N
Hydrogen Fluoride	Х	Х	N	Х	G	N	Е	N	N		Lacquer Solvents	Х	X	Х	Х	Х	Х	Х	Е	Е
Hydrogen Gas	Х	X	N	X	G	N	Е	N	N		Lactic Acid - Cold	G	G	Е	Х	Е	G	Х	С	N
Hydrogen peroxide 3%	Е	С	G	G	Е	Е	G	Е	E		Lactic Acid - Hot	Х	Х	Х	Х	Ν	С	Х	N	N
Hydrogen Peroxide 10%	Х	X	С	X	С	С	С	Е	E		Lactol	N	N	G	G	Ν	Ν	Ν	Е	N
Hydrogen Peroxide 30%	Х	Х	Х	Х	Χ	Х	С	Е	Е		Lard	X	Х	G	Е	Х	Χ	С	Е	Е
Hydrogen Peroxide 90%	Х	X	X	X	X	X	С	G	G		Lasso (Alachlor)	N	N	N	N	Ν	Ν	N	Е	N
Hydrogen Sulfide	Х	Х	Е	Х	Е	G	Е	Е	Е		Latex Paint	G	G	N	Е	G	Ν	Е	Е	Е
Hydrolube	N	N	G	Е	G	N	Е	N	Е		Lauryl Alcohol	Е	Е	Е	Е	Е	Е	Е	Е	Е
Hydroquinine	G	G	Х	Х	G	С	G	Е	Е		Lavender Oil	X	Х	Х	G	X	Х	Х	G	N
Hydroxyacetic Acid Solution	N	N	N	N	N	N	G	Е	E		Lead Acetate	Х	Х	G	G	Е	Х	G	Е	Е
Hydroxyethyl Acrylate (HEA)	N	N	N	N	N	N	Х	Е	Е		Lead Nitrate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Hydroxyethyl Acrylate Acid (HEA Acid	N	N	N	N	N	N	Х	Е	Е		Lead Sulfamate	G	G	Е	G	Е	G	Е	Е	Е
Hydroxypropyl Acrylate Acid	N	N	N	N	N	N	Х	Е	E		Lead Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Hylene	X	X	X	X	G	X	G	N	N		Lead, Tetraethyl	X	X	X	G	X	X	X	G	N
Hypochlrous Acid	G	G	G	Х	G	E	G	E	E		Lead, Tetramethyl	X	X	X	G	X	X	X	N	N
Ink Oil (Linseed Oil Base)	X	X	G	G	G	G	G	E	E		Lecithin	N	N	G	X	N	N	N	E	N
Insulating Oil	X	X	G	E	X	X	X	E	E		Ligroin	X	X	E	Е	X	X	X	E	E
Iodine	X	X	X	X	X	F	X	E	E		Lime	X	X	С	F	E	E	G	E	E
Iron Acetate	X	X	X	X	E	X	G	E	E		Lime, Chlorinated	G	G	X	G	G	X	G	E	Е
Iron Hydroxide	С	С	E	G	E	G	G	E	E		Lime Sulphur Solution	X	X	E	X	X	G	G	E	E
Iron Salts	E	E	E	E	E	E	E	E	E		Limonene	X	X	N	X	N	N	X	G	Е
Iron Sulfate	E	E	E	E	E	E	E	E	E		Lindol (Tricresyl Phosphate)	X	X	X	X	E	G	E	E	E
Iron Sulfide	E	E	E	E	E	E	E	E	E		Linoleic Acid	X	X	X	X	X	X	X	N	N
Isoamyl Chloride	X	X	X	X	E C	X	G X	E G	E G		Linseed Oil Liquid Petroleum Gas	X	X	G	E	E	C G	G	E	E
Isoamyl Ether	X	X	X	X	X	X	X	E	E		Liquid Petroleum Gas Liquid Soap	X E	E	E	E	X E	E	X E	E	E
Isoamyl Ether								E	E											
Isoamyl Phthalate Isobutane	X	X	X E	X E	E	X	G E	E	E		Liquified Natural Gas  Lubrication Oils	X	X	C	X E	X	X F	X	X	X E
	E	E	E	E	X E	E	E	E	E			G	G	G	E	E	E	E	E	G
Isobutanol (Isobutyl Alcohol)			X				G	E	E		Lye Solution  Machine Oil Under 135°F		X	E	E				E	
Isobutyl Acetate Isobutyl Aldehyde	X C	X	X	X	E G	X	G	E	E			X	X	N	Е	X N	G E	X N	E	N N
Isobutyl Amine	G	C	X	X	G	C	G	E	E		Maganese Salts Magnesium Acetate	X	X	X	X	N E	X	G	E	E
Isobutyl Bromide	X	X	X	X	X	X	X	G	G		Magnesium Carbonate	E	E	E	E	Е	^ E	E	E	E
Isobutyl Carbinol	E	E	G	E	E	E	E	E	E		Magnesium Chloride	E	E	E	E	E	E	G	E	E
Isobutyl Chloride	X	X	X	X	X	X	X	G	G		Magnesium Chloride Brine	E	N	N	Е	N	N	E	E	E
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	R	R	R	R	R	М	М	Е	Е		R	R	R	R	R	М		М
Magnesium Hydrate	Е	G	Е	G	Е	G	Е	Е	Е	Methylene Chloride	Х	Х	Х	Χ	Χ	Х		Х
Magnesium Hydroxide	Е	Е	Е	Е	Е	Е	G	Е	Е	Methylene Dichloride	X	Х	Х	Χ	Χ	Χ		Х
Magnesium Nitrate	Е	Е	Е	Е	Ε	Е	Е	Е	Е	Methyl Ethyl Ketone (MEK)	G	Х	х	Х	G	Х		G
Magnesium Oxide, Slurry	G	N	Е	G	N	N	Е	Е	N	Methyl Formate	С	С	G	Χ	G	С		G
Magnesium Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Methyl Hexanol	Е	Е	Е	Е	Е	Е		Е
Malathion 50 in Aromatic Solvents	Х	Х	С	С	Х	Х	Х	Е	Е	Methyl Hexyl Ketone	Х	Х	Х	Χ	G	Х		G
Malathion 50 in Aromatic Solvents,	х	Х	Е	Е	Х	Х	Х	Е	Е	Methyl Isoamyl Ketone	Х	N	N	Χ	G	Х		N
Water Spray										Methyl Isobutenyl Ketone	Х	Х	х	Χ	G	Х		G
Maleic Acid	X	Х	Х	F	Х	F	F	G	G	Methyl Isobutyl Carbinol	G	С	G	G	Е	G		Е
Maleic Anhydride	х	Х	С	Х	С	Х	С	Е	Е	Methyl Isobutyl Ketone (MIBK)	Х	Х	Х	Χ	G	Х		G
Malic Acid	Е	G	С	G	Х	G	Х	Е	Е	Methyl Isopropyl Ketone	х	Х	х	Х	G	Х		G
Malt Extract (Maltine)	N	N	N	N	N	N	E	E	E	Methyl Methacrylate	X	X	X	Х	Х	G		G
Maganese Sulfate	Е	Е	Е	Е	E	E	E	E	E	Methyl Methacrylate Monomer, Inhibited	X	X	Х	Х	Х	Х		Х
Maganese Sulfide	С	E	G	E	E	E	G	E	E	Methyl Normal Amyl Ketone	X	N	N	X	G	X		G
Manganese Sulfite	C	E	G	E	E	E	G	E	E	Methyl Phenol	X	X	X	X	G	X		N
Maxmul (Penzoil Hydraulic Fluid)	N	N	G	E	N	N	N	N	N	Methyl Propyl Carbinol	E	E	E	^ E	E	^ E		E
Mek	G	X	X	X	G	X	G	E	G	Methyl Propyl Ether	X	X	X	X	X	X		X
Mercuric Chloride	G	G	c	c	G	G	С	E	E	Methyl Propyl Ketone	X	X	X	X	^ G	X		^ G
Mercuric Cyanide Solutions			E	G				E				X						G
*	G	G			G	E	G	E	N E	Methyl Salicylate	X		X	X	G	X		
Mercurous Nitrate Solutions	N	N	N	N	N	N	G			Methyl Sulfate	X	X	X	X	G	X		X
Mercury Mercury Vapors	E	E	E	E	E	E E	E	E	E	Methyl Tertiary Butyl Ether (MTBE)	X	X	X N	X	X E	X G		X E
• •									E	Methylallyl Chlorida	X	N						
Mesityl Oxide (Methyl Isobutenyl Ketone)	X	X	X	X	G	X	G	E		Methylallyl Chloride	X	N	N	X	X	X		N
Mesitylene Metallia Saana	X	X	X	X	X	N	X	N	N	Methyldiethanolamine	X	N	N	E	X	X		X
Metallic Soaps	X	X	N	E	X	G	X	E	E	Metribuzin	N	N	N	N	N	N		E
Methacrylic Acid	X	X	G	X	G	С	G	E	E	Mineral Spirite	X	X	С	E	X	G		X
Methallyl Alcohol	G	N	N	E	G	G	N	N	N	Mineral Spirits	X	X	G	E	X	X		X
Methane	X	X	G	E	X	G	X	E	E	Molasses	G	G	G	G	E	E		E
Methanoic Acid	N	N	N	N	N	N	E	N	N	Molten Sulfur	X	X	N	N	G	F		X
Methanol (Methyl Alcohol)	X	X	X	X	X	X	X	G	G	Monochlorobenzene	X	X	X	X	X	X		X
Methyl Acetate	F	X	X	X	G	X	G	Ε	Ε	Monochlorodifluoromethane (Freon 22)	X	X	E	X	E	X		E
Methyl Acetoacetate	X	N	X	X	G	X	G	N	N	Monoethanolamine	G	C	G	С	G	G		G
Methyl Acetone	X	N	N	X	G	X	E	N	N	Monochloroacetic Acid	G	N	N	X	X	X		X
Methyl Acrylate	С	X	С	X	G	X	G	E	E	Monoethylamine	X	X	X	X	G	X		Ε
Methyacrylic Acid	X	X	N	G	Ε	N	G	E	E	Monoisopropanol Amine	G	N	N	G	E	X		N
Methylaniline	N	N	X	X	N	G	G	E	E	Monomethylether	G	G	Ε	E	Ε	С		C
Methyl Alcohol (Methanol)	X	X	X	X	X	X	X	G	G	Monopentaerythritol Solution	N	N	N	N	N	N		E
Methylallyl Alcohol	G	N	N	E	G	G	N	N	N	Monosodium Phosphate	G	G	X	N	G	N		G
Methylamine (30-40% in water)	N	N	N	X	N	N	G	E	N	Monovinyl Acetate	X	X	X	X	G	С		С
Methyl Benzene (Toluene)	X	X	X	X	X	X	X	E	E	Morpholine	N	N	N	X	N	N		X
Methyl Bromide	X	X	X	G	G	X	G	E	Ε	Motor Oil - 40W	X	X	E	E	X	X		X
Methyl Butanathiol	X	X	N	N	X	N	X	E	N	Muriatic Acid	E	X	X	X	F	X		F
Methyl Butanol	N	N	N	E	E	N	E	E	E	Mustard	E	E	E	N	E	E		N
Methyl Butyl Ketone	X	Х	Х	Х	G	Х	G	Е	Е	N-Octane	X	Х	G	G	Х	Х		X
Methyl Carbitol	X	Х	N	N	Х	Х	Е	Е	N	Naphta	Х	Х	G	Ε	Х	Х		Х
Methyl Cellosolve	Х	Х	G	С	G	С	G	Е	Е	Naphtialene	X	Х	Х	Χ	Х	Х		X
Methyl Chloride	Х	Х	Х	F	Х	Х	Е	G	F	Naphthenic Acids	Х	Х	Х	G	Х	Х		Χ
Methyl Chloroform	Х	Х	Х	Х	Х	Х	Х	G	N	Natural Gas	X	Х	F	F	Χ	F		Χ
Methyl Chloroformate	Х	Х	Х	Х	Х	Х	Х	N	N	Neatsfoot Oil	Х	Х	G	Е	G	G		G
Methyl Cyclohexane	Х	Х	Х	Х	Χ	Χ	Х	G	G	Neohexane	N	N	G	Е	N	N		Χ
Methyl Ethyl Acetate	Х	N	N	Х	Е	G	Х	Е	G	Neon Gas	Е	Е	Е	Е	Е	Е		Х
Methyl Ethyl Alcohol	Е	N	N	Е	Е	Е	Е	Е	Е	Neu-Tri (Trichloroethylene)	X	Х	Х	С	Χ	Χ		Χ
Methyl Ethyl Carbinol	Е	N	N	Е	Е	Е	Е	Е	Е	Neutral Oil	Х	Х	G	G	Х	N		Χ
Methyl Ethyl Ketone	Х	N	N	Х	G	Х	N	Е	Е	Nickel Acetate	X	Х	Χ	Χ	Е	Χ		G
Methyl Hexanone	Х	N	N	Χ	G	Χ	N	N	N	Nickel Chloride	Е	Е	Ε	Е	Ε	Е		Ε
Methylcyanide	N	N	N	N	N	N	Х	N	N	Nickel Nitrate	Е	Е	Е	Е	Е	Е		Е
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	R	R	R	R	R	М	M	E	Е		R	R	R	R	R	М	M	E	E
Nickel Salts	Е	Е	Е	Е	Е	Е	Е	Е	N	Peanut Oil	Х	Х	G	Е	С	G	Χ	Е	Е
Nickel Sulfate	Е	Е	Е	Е	Е	Е	Ε	Е	Е	Pelargonic Acid	X	N	N	Е	Е	Х	N	Е	Е
Niter Cake	Е	Е	Е	Е	Е	Е	Е	Е	Е	Pentachloroethane	Х	Х	N	N	Х	Х	Ν	Е	Е
Nitric Acid, Conc (16N)	Х	Х	Х	Х	G	G	Е	G	N	Pentachlorophenol in Oil	X	Х	Х	Х	Е	N	X	Е	Е
Nitric Acid, Red Fuming	X	X	X	Х	Х	Х	Χ	Х	Х	Pentane	Х	Х	Е	Е	Х	G	Х	Е	Е
Nitric Acid - 10%	Х	Х	Х	Х	G	G	G	Е	Ε	Pentanol	Е	N	N	Е	Е	Е	Е	Е	Е
Nitric Acid - 13N	N	N	N	N	N	N	С	N	N	Pentatone	Х	N	N	Х	G	Х	N	Е	Е
Nitric Acid - 13N + 5%	N	N	N	N	N	N	N	N	N	Perchloric Acid - 2N	G	G	Е	Х	G	Е	С	Е	Е
Nitric Acid - 20%	X	X	Х	Х	G	G	F	Е	Е	Perchloroethylene	Х	Х	Х	Х	Х	Х	Х	G	G
Nitric Acid - 30%	Х	х	Х	Х	F	F	F	G	G	Petrolatum	Х	Х	Е	Е	Х	С	Х	Е	Е
Nitric Acid - 30% to 70%	Х	Х	Х	Х	F	F	С	F	F	Petroleum, Crude	Х	х	G	Е	х	х	х	Е	Е
Nitrobenzene	х	Х	Х	Х	Х	Х	Х	Е	Е	Petroleum Ether (Naptha)	Х	Х	Е	Е	Х	Х	Х	Е	Е
Nitroethane	G	G	С	Х	G	G	Х	Е	N	Petroleum Naptha	х	Х	Х	Х	х	Х	Х	Х	х
Nitrogen Gas	Е	Е	Е	Е	Е	Е	Е	Е	Е	Petroleum Oils	Х	Х	Е	Е	Х	С	Χ	Е	Е
Nitrogen Oxide	X	Х	Х	Х	Е	Е	G	Е	N	Petroleum Paraffin Wax	N	N	N	N	N	N	Х	G	G
Nitrogen Tetraoxide	Х	Х	Х	Х	Х	Х	Х	Х	Х	Phenol	F	F	F	Х	Е	F	F	Е	E
Nitromethane	G	G	C	X	G	C	G	E	E	Phenol Acid	X	X	X	X	G	X	G	G	N
Nitropropane	С	С	С	X	E	С	G	E	E	Phenolates	N	N	X	X	N	X	N	N	N
Nitrous Oxide Gas	E	E	E	E	E	E	E	E	E	Phenolsulfonic Acid		X	C	X	С	X	С	G	G
			N	E	X				E		X	X							E
Nonenes	X	N				X	X	E		Phenyl Chloride	X		X	X	X	X	X	E	
Octadecanoic Acid	X	X	G	E	G	X	C	E	E	Phenylhydrazine	C	X	X	X	G	C	С	E	E
Octane	X	X	G	E	X	X	X	G	G	Phorone	X	X	X	X	Е	X	G	Ε	E
Octanol (Octyl Alcohol)	G	G	E	G	G	G	G	E	E	Phosgene (Carbonyl Chloride)	Х	Х	Х	Х	G	Х	Х	Χ	Х
Octyl Acetate	Х	Х	Х	Х	Е	Х	G	Е	E	Phosphate Esters	X	X	X	X	E	X	E	Е	E
Octyl Aldehyde	Х	N	N	Х	Х	Х	N	N	N	Phosphoric Acid 10%	E	Е	Е	Е	Е	Е	Е	Е	Е
Octyl Amine	С	С	G	С	G	С	G	Е	Е	Phosphoric Acid 10% - 85%	F	F	G	F	E	Е	Е	Е	Е
Octyl Carbinol	Е	Е	Е	Е	Е	E	Е	Е	Е	Phosphorous Trichloride	Х	Х	Х	Х	Е	Х	Е	Е	Е
Octylene Glycol	Ε	Е	Е	Е	Е	Е	Е	Е	E	Pickling Solution	С	С	С	С	С	С	С	Е	Е
Oil, ASTM#1	X	X	Е	Е	Х	G	Х	Е	Е	Pitric Acid, Molten	С	С	С	С	С	G	С	Х	Х
Oil, ASTM #2	Х	Х	Е	Е	Х	С	Х	Е	Е	Pitric Acid, Water Solution	Е	С	G	G	Е	Е	G	Е	Е
Oil, ASTM #3	X	X	С	G	Е	Х	Х	Е	Е	Pinene	Х	Х	Х	Е	Х	Х	Х	Е	Е
Oil - Petroleum	Х	Х	Е	Е	Х	F	Х	Е	Ε	Pine Oil	Х	Х	Х	F	F	Х	Χ	Е	Е
Oil of Turpentine	X	X	G	Е	Х	Х	Χ	G	G	Piperidine	Х	Х	Х	Х	Х	Х	Х	G	G
Oils, Animal (high fatty acid content)	Х	Х	G	Е	G	Х	Х	G	N	Pitch	X	Х	G	G	Х	С	Х	Е	Е
Oleic Acid	X	Х	F	С	G	Х	G	Е	Е	Plating Solutions, Chrome	Х	Х	G	G	Е	С	Е	Е	Е
Oleum (Fuming Sulf Acid)	х	Х	Х	Х	Х	Х	Х	Х	Х	Plating Solutions, Other	Е	Е	G	G	Е	С	Е	Е	Е
Olive Oil	X	Х	G	Е	Е	G	G	Е	Ε	Polyvinyl Acetate Emulsion (PVA)	С	С	G	С	Е	G	Е	Е	Е
Organic Fatty Acids	Х	N	N	Е	Х	Х	Х	Е	Е	Polyethylene Glycol	Е	Е	Е	Е	Е	Е	Е	Е	Е
Ortho-Dichlorobenzene	Х	Х	Х	Х	Х	Х	Х	Е	Е	Polypropylene Glycol	Е	Е	Е	Е	Е	Е	Е	Е	Ε
Orthodichlorobenzol	х	N	N	Х	Х	Х	Х	Е	Е	Polyurethane Foam Under 125°F	N	N	N	N	G	N	G	Е	N
Orthoxylene	Х	Х	N	N	Х	Х	Х	Е	G	Potassium Acetate	х	Х	Х	Х	Е	Х	G	Е	Е
OS 45 Hydraulic Fluid (Silicate Ester Base)	х	Х	Е	G	Х	G	Х	N	N	Potassium Bicarbonate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Oxalic Acid	F	F	G	F	Е	G	Е	Е	Е	Potassium Bisulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Oxygen, Cold	G	G	G	G	Е	G	G	Е	Е	Potassium Bisulfite	Е	Е	Е	Е	Е	Е	Е	Е	Е
Oxygen, Hot	X	X	X	Х	X	Х	Х	E	E	Potassium Bromide	E	E	E	E	E	E	E	E	N
Ozone	X	F	G	Х	G	E	E	E	E	Potassium Carbonate	E	E	E	E	E	E	E	E	E
Paint Thinner	X	X	X	X	Х	X	X	E	E	Potassium Chloride	E	E	E	E	E	E	E	E	E
Paint (Emulsion or Latex)	N	N	N	G	N	N	G	E	E	Potassium Chromate	X	X	F	X	E	F	G	G	G
Paint (Cillusion of Latex)  Paint (Oil or Solvent Based)	X	X	N	G	X	X	X	E	N	Potassium Cyanide	E	E	E	E	E	E	E	E	E
			C	E	E	c						X	G			F			
Palmitic Acid	X	X					С	G	E	Potassium Dichromate	X			X	Е		G	Е	E
Palm Oil	X	X	G	E	E	G	G	E	E	Potassium Hydravida	E	G	G	G	E	G	E	E	E
Papermakers Alum	E	E	E	E	E	E	E	E	E	Potassium Hydroxide	E	E	С	E	E	E	E	E	E
Para-Dichlorobenzene	X	X	X	X	X	X	X	G	G	Potassium lodide	N	N	E	E	N	E	E	N	N
Paraffin Wax	X	X	G	E	X	X	X	X	X	Potassium Nitrate	E	E	Ε	Ε	E	Ε	E	E	E
Paraformaldehyde	Х	Х	G	G	G	G	G	Е	Е	Potassium Permanganate 5%	Х	Х	Х	Х	Е	Х	Е	Е	Е
Paraldehyde	Х	N	N	Х	G	Х	G	Е	Е	Potassium Phosphate	N	N	Е	N	N	Е	Е	N	N
Paraxylene	X	N	N	N	Χ	Χ	N	Е	Е	Potassium Silicate	Е	Е	Е	Е	Ε	Ε	Ε	Е	Е

									U	
							Е	х	H M	
		s		N	1	С	P	L	w	
	N	В	С	В	i	s	D	P	P	
	R	R	R	R	R	М	М	Е	Е	
Potassium Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Soda Ash
Potassium Sulfide	Е	Е	Е	Е	Е	Е	Е	Е	Е	Soda, Caustic (
Potassium Sulfite	Е	Е	Е	Е	Е	Е	Е	Е	Е	Soda Lime
Potassium Thiosulfate	N	N	Е	N	N	Е	Е	N	N	Soda Niter (Soc
Producer Gas	Х	Х	G	Е	Х	G	Х	Е	Е	Sodium Acetate
Propane	Х	Х	С	Е	Х	G	Х	Е	N	Sodium Alumina
Propanediol	Е	Е	G	Е	Е	Е	Е	Е	Е	Sodium Bicarbo
Propanol	Е	N	N	Е	Е	Е	Е	Е	Е	Sodium Bichron
Propionic Acid	G	G	Х	Х	G	G	G	Е	Е	Sodium Bisulfat
Propyl Acetate	Х	Х	Х	Х	G	Х	G	Е	Е	Sodium Bisulfite
Propyl Alcohol (Propanol)	Ε	Ε	Ε	Ε	Е	Ε	Ε	Ε	Ε	Sodium Borate
Propyl Aldehyde	X	N	N	X	G	X	N	N	N	Sodium Carbon
Propyl Chloride	X	X	C	X	C	X	C	G	G	Sodium Chlorid Sodium Chlorid
Propylene Propylene Diamine	X	X G	X G	X G	X E	X C	X G	N E	N E	
Propylene Diamine  Propylene Diamine	X	X	X	X	X	X	X	G	G	Sodium Cyanida
Propylene Dichloride Propylene Glycol	E	E	E	E	E	E	E	E	E	Sodium Cyanide Sodium Dichror
Propylene Tetramer	X	N	N	E	X	X	X	E	E	Sodium Fluoride
Purina Insecticide	N	N	X	X	G	N	G	E	N	Sodium Hydrate
Puropale RX Oils	N	N	N	E	Х	N	Х	E	N	Sodium Hydoxid
Pydraul Hydraulic Fluids	X	X	X	X	G	X	G	G	G	Sodium Hypoch
Pyranol	Х	Х	Х	С	Х	Х	Х	E	E	Sodium Metallio
Pyrene (Carbon Tetrachloride)	Х	Х	Х	Х	Х	Х	Х	G	X	Sodium Metaph
Pyridine	Х	Х	Х	Х	G	Х	G	Е	Е	Sodium Nitrate
Pyroligneous Acid	С	С	G	С	G	G	G	Е	Е	Sodium Nitrite
Pyrrole	С	G	Х	Х	G	Х	С	Е	Е	Sodium Perbora
Quenching Oil	N	N	G	G	N	N	N	N	N	Sodium Peroxic
Quintolubric 822	N	N	G	Ε	Х	N	G	Е	N	Sodium Phopha
Rando Oils	N	N	N	Е	Χ	N	Х	Е	N	Sodium Silfhydr
Rape Seed Oil	Х	Х	G	G	Е	G	G	G	G	Sodium Silicate
Red Oil (Crude Oleic Acid)	X	Х	G	G	G	G	G	Е	Е	Sodium Sulfate
Refined Wax (Petroleum)	Х	Х	G	Ε	N	N	N	Е	N	Sodium Sulfide
Refrigerant 11 - Freon	X	Х	С	Е	Х	F	F	G	G	Sodium Sulfite
Refrigerant 12 - Freon	Х	Х	G	Ε	Х	Х	Х	G	G	Sodium Sulphhy
Refrigerant 22 - Freon	X	X	E	Х	Е	X	X	E	E	Sodium Thiocya
Richfield A Weed Killer 100%	X	X	X	X	X	X	X	G	G	Sodium Thiosul
Richfield B Weed Killer 33%	X	X	G	G	G	С	X	G	G	Soinus Oils
Rosin Oil	X	X	E	E	X E	G E	X	E	E	Soybean Oil
Rotenone and Water Rubilene Oils	E N	N	N	E	X	N	E	E	N	Spent Acid Stannic Chloride
Sal Ammoniac	E	E	E	E	E	E	E	E	E	Stannic Sulfide
Salicylic Acid	E	G	X	X	E	E	E	E	E	Stannous Chlor
Sea Water	E	E	E	E	E	E	E	E	E	Stannous Sulfid
Sevin	N	N	N	N	N	N	G	G	N	Starch
Sewage	F	F	G	E	F	E	G	E	E	Starch Gum
Sillicate of Soda	E	Е	E	E	E	E	E	E	E	Steam - Below
Silicone of Soda (Sodium Silicate)	Е	Е	Е	Е	Е	Е	Е	Е	Е	Stearic Acid
Silicate Esters	Х	Х	Е	G	Х	Е	Х	Е	Е	Stoddards Solve
Silicone Greases	Е	Е	Е	Е	Е	Е	Ε	Е	Е	STPP (Sodium
Slicone Oil	Е	F	Е	Е	Е	Е	F	Е	Е	Styrene
Silver Cyanide	N	N	Е	N	N	N	N	Е	N	Sugar Solutions
Siver Nitrate	Е	Е	Е	Е	Е	Е	Е	Е	Е	Sulfamic Acid
Skelly Solvent	Х	Х	G	Е	Х	С	Х	Е	Е	Sulfite Liquors
Skydrol Hydraulic Fluids	Х	х	Х	Х	Е	Х	Е	Е	Е	Sulfonic Acid
Soap, Liquid										1
	G	G	Е	Е	G	Е	Е	Е	N	Sulfur (Molten)
Soap Oil	G N	G N	E X	E X	G N	E X	E N	E	N G	Sulfur (Molten) Sulfur Chloride

		s		N	1	С	P	L	w	
	N	В	С	В	i	s	D	P	Р	
	R	R	R	R	R	М	М	Е	Е	
Soda Ash	Е	Е	Е	Е	Е	Е	Е	Е	Е	
Soda, Caustic (Sodium Hydroxide)	Е	G	Е	G	Е	Е	Е	Е	Е	l
Soda Lime	Е	Ε	G	G	Е	G	Е	Е	Е	l
Soda Niter (Sodium Nitrate)	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Acetate	Х	Х	Х	Х	Х	Х	G	Е	Е	l
Sodium Aluminate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Bicarbonate	Ε	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Bichromate Solution	G	G	G	G	Е	G	Е	Е	N	l
Sodium Bisulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Bisulfite	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Borate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Carbonate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Chloride Solution	G	G	Х	Х	G	G	Х	N	N	l
Sodium Chromate	Х	Х	С	Х	Е	С	G	G	G	l
Sodium Cyanide	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Dichromate	Х	Х	С	Х	Е	F	G	Е	Е	l
Sodium Fluoride	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Hydrate	G	G	G	G	G	G	Е	G	N	l
Sodium Hydoxide (Caustic Soda)	Е	С	Е	G	Е	Е	Е	Е	Е	l
Sodium Hypochlorite	F	Х	Х	Х	G	F	G	G	G	l
Sodium Metallic	N	N	N	G	N	N	Е	N	N	l
Sodium Metaphosphate	Е	Е	G	Е	Е	G	Е	Е	Е	l
Sodium Nitrate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Nitrite	Ε	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Perborate	С	Х	G	Х	Е	Х	G	Е	Е	l
Sodium Peroxide	G	G	G	G	Е	G	Е	G	G	l
Sodium Phophate	Е	G	G	Е	Е	Е	Е	Е	Е	l
Sodium Silfhydrate	G	Х	G	G	G	G	Е	G	N	l
Sodium Silicate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Sulfide	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Sulfite	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sodium Sulphhydrate	N	N	G	G	Е	G	Е	G	N	l
Sodium Thiocyanate Solution	N	G	Е	Е	G	G	Е	Е	N	l
Sodium Thiosulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Soinus Oils	N	N	N	Е	Х	N	Х	Е	N	l
Soybean Oil	Х	Х	G	G	G	G	Е	Е	Е	l
Spent Acid	Х	Х	Х	Х	Х	G	Х	G	G	l
Stannic Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Stannic Sulfide	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Stannous Chloride	Е	Е	Е	Е	G	Е	Е	Е	Е	l
Stannous Sulfide	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Starch	Е	Е	G	G	N	Е	Е	Е	N	l
Starch Gum	N	N	Е	E	Х	N	Е	Е	N	l
Steam - Below 350°F	Х	Х	Х	Х	G	Х	Е	Х	Х	l
Stearic Acid	Х	Х	G	G	G	G	G	Е	Е	l
Stoddards Solvent	Х	Х	С	Е	Х	Х	Х	Е	Е	l
STPP (Sodium Tripolyphosphate)	G	G	N	N	G	N	G	G	N	l
Styrene	Х	Х	Х	Х	Х	Х	Х	Х	Х	l
Sugar Solutions (Sucrose - Non F.D.A.)	Е	Е	Е	Е	Е	Е	Е	Е	Е	l
Sulfamic Acid	С	С	G	G	E	G	E	E	Ε	l
Sulfite Liquors	G	G	G	G	E	E	G	E	E	l
Sulfonic Acid	Х	Х	С	Х	X	С	Х	G	G	
Sulfur (Molten)	Х	Х	Х	Х	F	F	F	G	G	
Sulfur Chloride	X	X	C	C	X	G	X	E	G	
Sulfur Dioxide	F	F	G	Х	G	G	F	G	G	l

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									Н										Н
							Е	х	М								Е	х	М
		s		N	ı	С	Р	L	w			s		N	1	С	Р	L	w
	N	В	С	В	1	s	D	Р	Р		N	В	С	В	1	s	D	Р	P
	R	R	R	R	R	М	М	Е	Е		R	R	R	R	R	M	M	E	Е
Sulfur Hexafluoride	Е	Е	Е	Е	Е	Е	Е	Е	Е	Trichloroacetic Acid	С	G	Х	G	G	Х	G	Е	N
Sulfur Trioxide	Х	Х	Х	Х	G	Х	С	G	G	Trichlorobenzene	Х	Х	Х	Х	Х	Х	Χ	G	G
Sulfuric Acid 60% (200°F)	X	Х	F	Х	F	G	G	Е	Е	Trichloroethane	Х	Х	Х	Х	Χ	Х	Χ	Е	Е
Sulfuric Acid - Conc.	Х	Х	Х	Х	Х	Е	Х	Е	Х	Trichloroethylene	Х	Х	Х	С	Х	Χ	Χ	G	Х
Sulfuric Acid - Fuming	X	Х	Χ	Х	Х	Х	Х	Х	Х	Trichloropropane	Х	Х	Х	Χ	Х	Χ	Χ	Е	Е
Sulfuric Acid 25%	G	G	G	Е	Е	Е	G	Е	Е	Tricresyl Phosphate (TCP)	Х	Х	Х	Х	Ε	Χ	G	Е	Е
Sulfuric Acid 25% - 50%	G	Х	Χ	F	Е	Е	Е	Е	Е	Tridecanol	Е	Е	Е	Е	Е	E	Е	Е	Е
Sulfuric Acid 50% - 96%	Х	Х	F	Х	F	G	G	Е	Е	Triethanolamine (TEA)	G	G	Е	G	Е	Ε	G	Е	Е
Sulfurous Acid	G	С	G	С	G	Е	G	Е	Е	Triethylamine	G	G	Е	G	G	Е	G	Е	Е
Sun R&O Oils	N	N	N	Е	Х	N	Х	Е	N	Triethylene Glycol	Е	Е	Е	Ε	Ε	Ε	Е	Ε	Ε
Suntac HP Oils	N	N	N	Е	Х	N	Х	Е	N	Trifluralin	Х	N	N	Х	Χ	Χ	Χ	Е	Е
Suntac WR Oils	N	N	N	Е	Х	N	Х	Е	N	Trihydoxybenzoic Acid	G	G	Х	Х	G	N	Е	Ε	Ε
Sunvis Oils 700, 800, 900	N	N	N	Е	Х	N	Х	Е	N	Trimethylbenzene	Х	Х	Х	Х	Х	N	Χ	N	N
Synthetic Oil (Citgo)	N	N	N	Е	Х	N	Х	Е	N	Trinitrophenol	G	G	G	G	G	G	G	G	G
Syrup	Е	Е	G	N	N	N	N	Е	Е	Trinitrotoluene (TNT)	Х	Х	G	Х	Х	G	Χ	Χ	Х
Tall Oil	Х	Х	G	Е	Х	G	Х	Е	Е	Triphenyl Phosphate	Х	Х	С	Х	Е	С	G	Ε	Ε
Tallow	X	Х	Е	Е	Х	Х	Х	Е	Е	Tripoly Phosphate	G	G	N	N	G	N	G	G	N
Tannic Acid	Е	G	G	С	Е	G	Е	Е	Е	Trisodium Phosphate	Е	Ε	Е	Е	Ε	Е	Ε	Ε	Е
Tar	Х	Х	G	G	Х	Х	Х	Е	Е	Tung Oil	Х	Х	G	Е	С	G	Х	Е	Е
Tar Bituminous	х	Х	С	G	Х	Х	Х	N	N	Turbine Oil	х	Х	G	G	Х	G	Х	Е	Е
Tartaric Acid	Е	Е	G	Е	Е	Е	G	Е	Е	Turpentine	Х	Х	Е	Е	Х	Х	Х	G	Е
Tellus Oils	N	N	N	Е	Х	N	Х	Е	N	2, 4D With 10% Fuel Oil	х	Х	Е	Е	Х	Х	Х	Е	Е
Tergitol	N	N	N	N	N	N	N	N	Х	Ucon Hydrolube Oils	Х	Х	G	Е	Е	Х	Е	Е	Е
Terpineol	х	Х	Х	Х	С	Х	С	G	G	Undecanol	G	N	N	Е	N	G	N	N	N
Tertiary Butyl Alcohol	Е	Е	Е	Е	Е	Е	Е	Е	Е	Undecyl Alcohol	G	N	N	Е	N	G	N	N	N
Tetrachlorobenzene	х	Х	Х	Х	Х	Х	Х	G	G	Union Hydraulic Tractor Fluid	N	N	N	Е	Х	N	Х	Е	N
Tetrachloroethane	Х	Х	Х	Х	Х	Х	Х	Е	G	Unsymmetrical Dimethyl	х	Х	Х	х	Е	Е	Е	С	С
Tetrachloroethylene	х	Х	Х	Х	Х	Х	Х	Е	Е	Hydrazine (UDMH)									ı
Tetrachloromethane	Х	Х	Х	Х	Х	Х	Х	G	G	Uran	G	С	G	G	G	Е	G	Е	Е
Tetrachloronapthalene	х	Х	Х	Х	Х	Х	Х	G	G	Urea	Е	F	Е	F	Е	F	Е	Е	Е
Tetradecanol	Е	Е	Е	Е	Е	Е	Е	Е	Е	Urethane Formulations	N	N	N	Е	N	N	N	N	N
Tetraethylene Glycol	Е	Е	Е	Е	Е	Е	Е	Е	Е	Uric Acid	N	N	N	N	N	N	N	N	N
Tetraethyl Lead	Х	Х	С	G	Х	Х	Х	Е	Е	Varnish	х	Х	G	G	х	F	Х	Е	Е
Tetrahydrofuran (THF)	х	Х	Х	Х	х	Х	Х	Е	Е	Vegetable Oils	х	Х	G	Ε	Е	G	С	Е	Ε
Tetrahydroxydicyclopentadiene	Х	Х	Х	Х	Х	Х	Х	N	N	Versilube	С	С	С	Е	Е	Е	Е	Е	Е
Tetralin	Х	Х	Х	Х	Х	х	Х	N	N	Vinegar	Е	F	Е	С	Е	Е	G	Е	Е
Theobromo Oil	Х	Х	G	G	N	N	N	Е	G	Vinegar Acid	Е	F	Е	F	Е	Е	G	Е	Е
Thionyl Chloride	х	Х	Х	Х	х	Х	Х	Е	Е	Vinyl Acetate	х	Х	Х	Х	G	F	F	G	Х
Thiopen	X	Х	Х	Х	G	N	Х	N	N	Vinyl Benzene	х	Х	Х	Х	х	Х	Х	G	G
Tin Chloride	Е	Е	Е	Е	Е	Е	Е	Е	Е	Vinyl Chloride	F	Х	Х	Х	Х	Х	Х	Е	Е
Tin Tetrachloride	Е	Е	Е	Е	Е	Е	Е	Е	Е	Vinyl Cyanide	N	N	N	N	N	N	N	N	N
Titanium Tetrachloride	Х	Х	G	F	Х	F	F	Е	G	Vinyl Ether	Х	Х	Х	Х	Х	С	С	Е	Е
Toluene	Х	Х	Х	Х	Х	Х	Х	Е	Е	Vinyl Styrene	N	N	N	N	N	N	N	N	N
Toluene Diisocyanate (TDI)	С	С	Х	С	Е	Х	Е	Е	Е	Vinyl Toluene	Х	Х	Х	Х	Х	Х	Х	G	G
Toluidine	Х	N	N	Х	Х	Х	N	N	N	Vinyl Trichloride	х	Х	Х	х	Х	Х	Х	Е	Е
Toluol	х	N	N	х	Х	х	Х	Е	Е	Vitrea Oils	N	N	N	Е	Х	N	Х	Е	N
Toxaphene	Х	Х	G	G	Х	Х	Х	Е	Е	V.M. & P. Naptha	х	Х	Е	Е	Х	Х	Х	Е	Е
Transformer Oils (Petroleum Base)	Х	Х	G	E	X	G	X	E	E	Water, Fresh (NON F.D.A.)	E	E	E	E	E	E	E	E	E
Transformer Oils (Chloronated Pheynyl	X	X	X	X	X	X	X	G	G	Water Boiling	N	N	E	N	N	N	E	N	N
Base Askerels)	Ĭ .	``	^	``		``	``			Water, Salt	E	E	E	G	E	E	E	E	E
Transmission Fluids A	х	х	С	G	х	х	х	Е	Е	Whiskey	E	E	E	E	E	E	E	X	N
Transmission Fluid B	X	X	X	С	X	X	X	E	E	White Liquor	E	E	E	E	G	E	С	E	E
Tributoxyethyl Phosphate	X	X	N	X	G	X	G	E	X	White Oil	X	X	G	E	X	X	X	E	E
Tributoxyl Ethylsulfate				X	E	X	E	X	N	Wines	E	E	E	Е	^ E	E	^ E	X	N
	X	N	N		E	C	E	E		Wood Alcohol							E	E	N E
Tributyl Amine	G	G	G	G					E		E	E	E	E	E	E			
Tributyl Phosphate	X	X	X	X	G E	X	G E	E	E	Xylene (Xytol)	X	X	X	X	X	X	X	С	С
Tricetin	Е	G	G	G	E	G	E	Е	Е	Xylidine	Χ	Χ	Х	Χ	Х	Χ	Χ	G	G

									U
									Н
							E	X	M
		s		N	-1	С	Р	L	W
	N	В	С	В	1	S	D	Р	Р
	R	R	R	R	R	M	М	Е	E
Zeolites	G	Е	Е	С	С	Е	Е	Е	Е
Zeric	N	N	N	Е	Х	N	Х	Е	N
Zinc Acetate	С	Χ	С	С	Е	С	G	Е	Е
Zinc Carbonate	Е	Е	Е	Е	Е	Е	Е	Е	Е
Zince Chloride	Е	Е	Е	Е	Е	Е	G	Е	Е
Zinc Chromate	Е	С	Е	Е	Е	С	Е	G	G
Zinc Sulfate	Е	Е	Е	Е	Е	Е	Е	Е	Е

	Resista	nce Rating	9
E	Excellent	С	Acceptable
G	Good	Х	Unsatisfactory
F	Fair	N	No Data

Maximum temperature 100°F (38°C) unless otherwise specified.

The reader is cautioned that the Chemical, Oil & Solvent Table for Rubber Hose is only a guide and should be used as such. The degree of resistance of an elastomer with a particular fluid depends on such variables as temperature, concentration, pressure, velocity of flow, duration of exposure, aeration, stability of fluid, etc. Also, variations in elastomer types and special compounding of stocks to meet specific service conditions have considerable influence on the results obtained.

**Warning:** The following data has been compiled from generally available sources and should not be relied upon without consulting and following the hose manufacturer's specific chemical recommendations. Neglecting to do so might result in failure of the hose to fulfill its intended purpose. This may result in possible damage to property and serious

bodily injury.

1-EXCELLENT 2-GOOD 3-LIMITED

				0				
Material Conveyed					nstruction nperature			
	PVC	(F°)	TPF	R (F°)		E (F°)	Polyure	thane (F°)
	68	104	68	104	68	104	68	104
Acetaldehyde	4	4	4	4	4	4	4	4
Acetaldehyde 40%	4	4	4	4	4	4	4	4
Acetate Solvents, crude	4	4	3	4	3	4	3	4
Acetate Solvents, pure	4	4	3	4	3	4	3	4
Acetic Acid 0-1%	1	2	1	2	3	4	4	4
Acetic Acid 20-30%	1	2	1	2	3	4	4	4
Acetic Acid 80%	2	2	1	2	4	4	4	4
Acetic Acid Vapors	1	2	1	2	3	3	4	4
Acetic Acid Glacial	2	3	2	3	4	4	4	4
Acetic Anhydride	4	4					4	4
Acetone	2	3	1	1	3	4	3	4
Acetylene	1	1					1	1
Acrylonitrite	1	2						
Adipic Acid	2	3					4	4
Allyl Alcohol 96%	4	4					4	4
Allyl Chloride	3	3					4	4
Alum	1	1	1	1	1	1	1	1
Aluminum Acetate	2	3						
Aluminum Alkyl	4	4						
Aluminum Chloride	1	1	1	1	1	1	3	3
Aluminum Flouride	1	1	1	1	1	1	1	1
Aluminum Hydroxide	1		1	1	2	2	2	3
Aluminum Nitrate	1	2					1	1
Aluminum Oxychloride	1	1						
Aluminum Phosphate Solution	4	4						
Aluminum Salts	1	1						
Aluminum Sulphate	1	1	1	1	1	1	1	1
Aminoethanol	2							
Ammonia - aqueous	1		1		3		3	4
Ammonia- dry gas	3	4	2		3		3	4
Ammonia- liquid	4	4	3		3		3	4
Ammoniated Latex	1	3						
Ammonium Acetate	1	1						
Ammonium Bicarbonate	1	1						
Ammonium Carbonate	1	1					1	1
Ammonium Chloride Solution	1	1					2	3
Ammonium Flouride 25%	4	4					3	4
Ammonium Hydroxide (30% NH)	4	4					3	4
Ammonium Metaphosphate	1	1					2	2
Ammonium Persulfate	1	1					2	2
Ammonium Nitrate	1	1					2	2
Ammonium Phosphate Solutions	1	1						
Ammonium Sulfate	1	1					1	1
Ammonium Sulfide	1	1	1	1	1	1	1	1
Ammonium Thiocyanate	1	1	1	1	2	2	2	2
Amyl Acetate	4	4						
Amyl Alcohol	1	2	1	2	4	4	4	4
Amyl Chloride	4	4	4	4	4	4		
Aniline	2	3	1	2			4	4
Aniline Chlorohydrate	4	4					4	4
Aniline Hydrochloride	4	4					4	4
Animal Gelatin	1	•						-
Animal Oils	1	1	1	1				
Ant Oil	4	4	1	-				

1-EXCELLENT

2-G00D

**3-LIMITED** 

		_		Hose Con	otruction			
Material Conveyed				with Tem				
material conveyed	PVC	(F°)	TPR	(F°)		(F°)	Polyuret	hane (F°)
	68	104	68	104	68	104	68	104
Anthraquinone	1	1						
Anthraquinonesufonic Acid	1	1					4	4
Antifreeze	1	1						
Antimony Chloride	1							
Antimony Salts	1	4					4	4
Antimony Trichloride	1	1 1					1	1
Apple Sauce/Juice Aqua Ammonia	4	4						
Aqua Regia	3	4	2	3			4	4
Argon, Compressed	4	4	_	Ŭ				7
Aromatic Hydrocarbons	3	3	1	1				
Arsenic Acid 80%	1	2	1	1	4	4	4	4
Arsenic Trichloride	1	1					1	1
Arsenic Trioxide	1							
Arylsulfonic Acid	3	4					4	4
Askarel (Transformer Oil)	4	4						
Asphalt	4	4	_	_	0	0	4	4
ASTM Fuel Oil # 1	1	1	1	1	2	2	1	1
ASTM Oil No. 2	4	4	4	1	0	2	1	1
ASTM Fuel Oil # 3	2 2	3 2	1 1	1	2 2	2 2	1	1
ASTM Fuel A ASTM Fuel B	4	4	1	1	2	3	2	3
ASTM Fuel B	4	4	'	'	2	3	2	3
Baby Food	1	1					_	J
Baltic Types 100, 150, 200, 300, 500	2							
Barium Carbonate	1	1	1	1	1	1	1	1
Barium Chloride	1	1	1	1	1	1	1	1
Barium Hydroxide	1	1					2	3
Barium Sulfate	1	1	1	1	1	1	1	1
Barium Sulfide	1	1	1	1	1	1	1	1
Barley	1	4						
Basic Copper Arsenate	1	_						
Beer	1	1						
Beet Sugar - liquor	1	1						
Bellows 80-20 Hydraulic Oil	2 4	4						
Benzaldehyde	4	4 4						
Benzene Benzidine	4	4						
Benzoic Acid	2	3	1	2	4	4	4	4
Benzoic Aldehyde	4	4	'	_	•	•	•	•
Benzol	4	4	2	3	3	4	3	4
Benzotrichloride	4	4						
Benzyl Alcohol	1							
Benzyl Chloride	4	4						
Berries	1	1						
Bismuth Carbonate	1	1					1	1
Black Liquor	1	1	1	1				
Blast Furnace Gas	4	4		_	_			
Bleach 12.5% Active CL	2	3	1	2	3	4	3	4
Borax	1 1	2 1	1 1	1 1			1	1
Bordeaux Mixture	1	1	1	1			4	4
Boric Acid Boric Oxide	1	1	'	1			4	4
Boron Triflouride	1	1					1	1
Brake Fluid (Petroleum Base)	2	'						
Brake Fluid (Synthetic Base)	2							
Brine	1	1	1	1	3	4	2	3
Bromic Acid	1	2	1	2	3	4	4	4
Bromine - Liquid	4	4	3	4	4	4	4	4
Bromine - Water	4	4	3	4	4	4	4	4
Bromobenzene	4	4						
Bromochloromethane	4	4						
Bromotoluene	4	4						
Bunker Oil	4	4	<u> </u>					

1-EXCELLENT

2-G00D

**3-LIMITED** 

1-EXCELLENT	2-G00	D	3-LIMI	IED	4-UN	SATISFA	CIORY	
				Hose Cor	nstruction			
Material Conveyed					nperature			
	PV	C (F°)	TPF	R (F°)		(F°)	Polvure	thane (F°)
	68	104	68	104	68	104	68	104
Butadiene	3	4	00	10-7	00	10-7	00	10-7
Butane	1	1	1	1	1	1	1	1
Butanol - Primary	4	4					3	4
Butanol - Secondary	4	4					3	4
Butter	2	3						-
Butyl Acetate	1							
Butyl Alcohol	1	2	1	2	1	2	3	4
Butyl Cellosolve	4	4	3	4				
Butyl Mercaptan	4	4						
Butyl Phenol	3	4	2	3				
Butyl Stearate	1							
Butylene	1	2	1	1	1	1	1	1
Butyric Acid 20%	3	4	2	3	3	4	3	4
Butynedial	4	4					4	4
Cake Alum Solution	1							
Calcium Arsenate	1							
Calcium Bisulfate	1	1	1	1	1	1		
CalciumBisulfide	2							
Calcium Bisulfite	1	1					1	1
Calcium Carbonate	1	1	1	1	1	1	1	1
CalciumChlorate	1	1	1	1	2	3	2	3
Clacium Chloride	1	1	1	1	3	4	3	4
Calcium Hydrosulfide	2							
Calcium Hydroxide	1	1	1	1	2	3	2	3
Clacium Hypochlorite	1	1	1	1	4	4	4	4
Calcium Metasilicate	1							
Calcium Nitrate	1	1	1	1	1	1	1	1
Calcium Silicate	1							
Calcium Sulfate	1	1	1	1	1	1	1	1
Calcium Sulfide	2							
Cane Sugar Liquors								
Carbolic Acid	4	4						
Carbon Bisulfide	1	1						
Carbon Dioxide	1	1						
Carbon Disulfide	4	4						
Carbon Monoxide	1	1	1	1	1	1	1	1
Carbon Tetrachloride	4	4	2	3	3	4	3	4
Carbolic Acid	4	4						
Carbonic Acid	1	1	1	1	4	4	4	4
Carrots	1	1	1	1	4	4		
Casein	1	2					1	1
Castor Oil	1	1	1	1	1	1	1	1
Catsup	1	2						
Caustic Potash	1	1	1	1	3	4	3	4
Caustic Soda	1	1	1	1	3	4	3	4
Cellosolve	3	4	2	3	2	3	2	3
Cellulose Acetate	1							
Cellulose Butyl	1	_						
Cheese	1	2						
Cherries	1	1						
China-Wood Oil	2							
Chlordane	2	_			1			_
Chloracetic Acid	1	4					4	4
Chloral Hydrate	1	1					2	3
Chloric Acid 20%	1	1			1		4	4
Chlorinated Hydrocarbons	1	1					4	4
Chlorinated Solvents	4	4						
Chlorine Gas - dry	1	1	1	1	4	4	4	4
Chlorine Gas - moist	3	4	2	3	3	4	4	4
Chlorine Trifluoride	4	4			1			
Chloroacetyl Chloride	1							
Chlorobenzene	4	4			1			
Chlorobromomethane	4	4						
Chloroethane	4	4						

1-EXCELLENT

2-GOOD

3-LIMITED

1-EXCELLENT	2-G00	D	3-LIMI	TED	4-UN	ISATISFA	CTORY	
					struction			
Material Conveyed				with Ten				
	PVC	(F°)	TPF	R (F°)	TPE	(F°)		thane (F°)
	68	104	68	104	68	104	68	104
Chloroform	4	4						
Chloropentane	4	4						
Chloropicrin Mixture	4	4						
Chlorotoluene	4	4						
Chlorox	1	4					4	4
Chlorsulfonic Acid	3	4					4	4
Chocolate	2	3						
Chocolate Syrup Chromic Chloride	1							
Chrome Alum	1	1	1	1	1	1	1	1
Chromic Acid 25%	2	3	1	2	4	4	4	4
Chromic Acid 50%	2	3	1	2	4	4	4	4
Chromium Trioxide	4	4		_	4	-	-	-
Cider	2	•						
Citgo FR Fuels	2							
Coal Gas	1							
Coal Tar	4	4	3	3			4	4
Coconut Oil	3	4	1	1	1	1	1	1
Cola Beverage	1	1						
Copper Chloride	1	2	1	1	1	1	1	1
Copper Cyanide	1	1						
Copper Flouride 2%	1	1					1	1
Copper Nitrate	1	2	1	1	1	1	1	1
Copper Sulphate	1	2					1	1
Core Oils	1	1					1	1
Corn Oils	1	2						
Cottonseed Oil	2	3					1	1
Creosole	4	4	3	4	3	4		
Creosote	4	4	3	4				
Cresylic Acid 50%	4	4					4	4
Crude Oil Sour	1	1	1	1	1	1	1	1
Crude Oil Sweet	1	1	1	1	1	1	1	1
Crude Wax	1							
Cupric Chloride	1							
Cupric Cyanide	1							
Cupric Nitrate	1							
Cupric Sulfate	1							
Cyanide, Copper	1							
Cyanide, Silver	1							
Cyanide Sodium	1	4						
Cyclohexane	4	4					3	4
Cyclohexanol Cyclohexanone	4	4					4	4
Cymene	4	4					7	7
Decanol	4	4						
Deicing Fluid	1	1						
Demineralized Water	1	1	1	1	3	4	2	4
Denatured Alcohol	1	•	'		o o	-	_	7
Detergents, synthetic	1	2	1	1				
Developers, photographic	1	_ 1	1	1				
Dextrin	1	•		•				
Dextron	2							
Dextrose	1	2	1	1	1	1	1	1
Diacetone	4	4						
Diacetone Alcohol	4	4						
Diammonium Phosphate	1							
Diazinon	2							
Diazo Salts	1	1						
Dibutyl Phthalate	1							
Dibutylamine	4	4						
Dichlorobenzene	4	4						
Dichlorobenzyl Chloride	4	4						
Dichloroethane	4	4						
Dichloroethylene	4	4						

### TABLE OF CHEMICAL RESISTANCE PVC, TPR, TPE & POLYURETHANE 1-EXCELLENT 2-GOOD 3-LIMITED 4-LINEATISEACTORY

1-EXCELLENT	2-G00	D	3-LIMI	TED	4-UN	ISATISFA	CTORY	
				Hose Cor	nstruction			
Material Conveyed					nperature			
	PV	C (F°)	TPF	R (F°)	TPE	E (F°)	Polyure	thane (F°)
	68	104	68	104	68	104	68	104
Dichloroethylene	4	4						
Dichloromethane	4	4						
Diesel Oils	3	4	1	2				
Diethanolamine	2							
Diethyl Ether	2							
Diethyl Ketone	4	4						
Diethyl Oxalate	4	4						
Diethylene Dioxide	2							
Diethylene Ether	4	4						
Diethylene Glycol	1	0						
Diglycolic Acid	1	2						
Dihydroxyethyl Ether	1	4					4	4
Dimethylamine	4	4					4	4
Dimethylbenzene	4	4						
Dimethylcarbonal	2	4						
Dimethylketone	4	4						
Dioctyl Phthalate	4	4						
Dioctyl Phosphite	4	4						
Dioxane	4	4						
Disodium Phosphate	1	1	1	1	1	1	1	1
Distilled Water	1	1	1	1	3	4	2	4
DMB ( Dimethylbenzene )	4	4						
Duro Oils	2							
EDB (Ethylene Dibromide)	4	4						
Eggs	1	1						
Emulsions, photographic	1	1						
Enamels	2							
Essential Oils	2							
Ethanolamine	2							
Ethers	4	4					2	3
Ethyl Acetate	4	4						
Ethyl Acrylate	4	4						
Ethyl Alcohol	2	3						
Ethyl Alcohol 50-98%	3	4						
Ethyl Bromide	4	4						
Ethyl Chloride	4	4	4	4	4	4	4	4
Ethyl Ether	4	4					2	3
Ethyl Ether Acetate	1							
Ethyl Mercaptan	4	4						
Ethyl Methyl Ketone	4	4						
Ethylbutanol	1							
Ethylbutyl Alcohol	1							
Ethylene Bromide	1	4	1	3	4	4	4	4
Ethylene Chlorohydrin	4	4						
Ethylene Dibromide	4	4						
Ethylene Dichloride	4	4					4	4
Ethylene Glycol	1	1	1	1	2	3	2	3
Ethylene Oxide	4	4					4	4
Ethylhexanol	1							
Ethylhexyl Acrylate	4	4						
Ethylhexyl Alcohol	1							
Fatty Acid	2							
Fatty Alcohol, Blend	1							
Ferric Chloride	1	1	1	1	2	3	2	3
Ferric Nitrate	1	1	1	1	1	1	1	1
Ferric Sulphate	1	1	1	1	1	1	1	1
Ferrous Chloride	1	1	'	'	'	'	1	1
	2	•					'	•
Ferrous Nitrate	1							
Ferrous Sulfate Solution	2				ĺ			
Fertilizer	1	1			]			
Figs	1				]			
Fish Solubles		1						
Fixing Solutions, photographic	1 1	2			ĺ			
Flour	1	4	1					

1-EXCELLENT

2-G00D

3-LIMITED

1-EXCELLENT	2-G00		3-LIMI	IED	7-01	ISAI ISF <i>E</i>	OIONI	
				Hose Cor	struction			
Material Conveyed				with Tem	perature			
	PVC	(F°)	TPR	(F°)	TPE	(F°)	Polyuret	hane (F°)
	68	104	68	104	68	104	68	104
Flourobic Acid	1	1	1	1	1	1		
Fluorine	4	4					4	4
Fluosilic Acid	4	4						
Foric Acid	1	3					4	4
Formaldehyde Solution (to 50%)	1							
Formalin	1	_						
Formic Acid 3%	1	2						
Formic Acid 10%	1	2					4	4
Formic Acid 25%	1	2					4	4
Formic Acid 50%	3	4					4	4
Freon-12	1	2	1	1	1	1	1	1
Fructose	1	1	1	1	1	1	1	1
Fruit Pulps and Juices	1	1	4	4	4	2	1	1
Fuel Oil	2	3	1	1	1	2	1	1
Fumaric Acid	4	4						
Furan	4	4					1	1
Furfural Alcohol	1 1	4 3	1				4	4
Furfuryl Alcohol	1	3						
Fusel Oil	4	4	1					
Gallic Acid Solution								
Gasohol	4 2	4 2	1	2	2	2	2	2
Gas - cook oven	1	1	1	1	1		1	1
Gas - natural (dry)						1		1
Gas- natural (wet)	1	1	1	1	1	1	1	1
Gasoline	4	4	4	4	0	0		
Gasoline - refined	3	4	1	1	2	3		
Gasoline, Unleaded	4	4						
Gasoline, White	4	4		4	4	4		4
Gelatin	1	1	1	1	1	1	1	1
Gin	1	2						
Ginger Ale	1	1						
Glacial Acetic Acid	4	4		4	4	4		4
Glucose	1	1	1	1	1	1	1	1
Glue	1	4		4	4	4		
Glycerine	1	1	1	1	1	1		
Glycerol	1	1		4				4
Glycol	1	1	1	1	2	2	1	1
Glycolic Acid 30%	1	1					4	4
Grape Juice	1	1						
Grapefruit Juice	1	1						
Grease		4						
Green Liquor (paper)	1	1						
Heptachlor	4	4	4	0	4		4	
Heptane	3	4	1	2	1		1	
Heptanol	1	4						
Hexane	3	4	1					
Honey	1	1						
HPO (Sodium Thiosulfate)	1							
Hydraulic Fluid	1		1					
Hydraulic Fluid HF-18, HF-20	2	4	1					
Hydrazine	4	4						
Hydro-Drive Oil (houghton)	2	4						
Hydrobromic Acid	4	4	4	4	4	4	4	4
Hydrochloric Acid 10%	1	1	1	1	4	4	4	4
Hydrochloric Acid 48%	3	4					4	4
Hydrocyanic Acid	4	4					1 4	4
Hydroflouric Acid 4%	2	3	1				4	4
Hydroflouric Acid 10%	3	3					4	4
Hydroflouric Acid 48%	3	4					4	4
Hydroflouric Acid 60%	3	4					4	4
Hydrofluosilicic Acid	4	4	_	4	4	4	4	4
Hydrogen	1	2	1	1	1	1	1	1
Hydrogen Bromide (Dry) (liquid)							1	1
Hydrogen Cyanide	1	1					4	4

### TABLE OF CHEMICAL RESISTANCE PVC, TPR, TPE & POLYURETHANE 1-EXCELLENT 2-GOOD 3-LIMITED 4-UNSATISFACTORY

1-EXCELLENT	2-G00	D	3-LIMI	ΓED	4-UN	SATISFA	CTORY	
	Hose Construction							
Material Conveyed	with Temperature							
	PVC (F°)		TPR (F°)		TPE (F°)		Polyurethane (F°)	
	68	104	68	104	68	104	68	104
Hydrogen Peroxide	4	4						
Hydrogen Peroxide 12%	1	2	1	1	2	3		
Hydrogen Peroxide 50%	1	3	1	2	3	4	2	3
Hydrogen Peroxide 90%	4	4	3	4	4	4	4	4
Hydrogen Phosphide	1	3						
Hydrogen Sulfide - Aqueous Solution	1 1	1 1						
Hydrogen Sulfide - Dry Hydrolube (water glycol)	1	1						
Hydrolubric Oil	2	1						
Hydroquinone Solution	2							
Hydroxylamine Sulfate	1	1						
Hypochlorous Acid	1	1					3	4
lodine	4	4						
Iron Acetete Liquor	1							
Iron Salts	1							
Iron Sulfate Solution	1							
Isobutanol	2							
Isobutyl Alcohol	2	4						
Isooctane	4 2	4						
Isopropanol	4	4						
Isopropyl Acetate Isopropyl Alcohol	1	2	1	1	3	4		
Isopropyl Ether	4	4	'		3	7		
JP 3, 4, 5	4	4	2	3	3	3	2	3
Jelly	1	1						
Jet Fuel - All Types	4	4						
Karo Syrup	1	1						
Kerosene	4	4	1	1	1	1	1	2
Ketones	4	4						
Kraft Liquor (paper)	1	1						
Lacquer Thinner	3	4	2	2	3	3	2	
Lactic Acid 28%	1	1					4	4
Lard	2	3					4	0
Lard Oil	1 1	2					1	2
Latex Paint Lauric Acid	1	1	1	1	3	4	3	4
Lauryl Chlorite	1	1	'		3	7	1	2
Lauryly Sulfate	1	1						_
Lead Acetate	1	1	1	1	1	1	1	1
Lead Nitrate Solution	1							
Lead, Tetraethyl	1							
Lemon Juice	1	2						
Ligroin	4	4						
Lime. Chloronated	2	_						
Lime, sulfur	1	1						
Linoleic Acid	1	4		1	_	1	4	4
Linseed Oil Liquid Soap	1 2	1	1	1	1	1	1	1
Liquors	1	2						
Lubricating Oils	4	4	1	1	1	1	1	1
Machine Oil under 135°F	2							•
Magnesium Carbonate	1	1	1	1	1	1	1	1
Magnesium Hydroxide	1	1	1	1	3	4	2	3
Magnesium Nitrate	1	1					1	1
Magnesium Sulfate Solution	1							
Malathion	1							
Maleic Acid Solution	4	4						
Manganese Salts	1							
Manganese Sulfate Solution	1	4						
Mayonnaise	1	1						
MBK (Methyl Butyl Ketone)	4 2	4						
MEA (Ethanolamine) MEK (Ethyl Methyl Ketone)	4	4						
Mercuric Chloride	2	2	1	1	2	3	2	3

1-EXCELLENT

2-GOOD

3-LIMITED

1-EXCELLENT	2-G00	D	3-LIMI	ΓED	4-UN	ISATISFA	CTORY		
	Hose Construction								
Material Conveyed	with Te				mperature				
	PVC (F°)		TPR (F°)		TPE (F°)		Polyurethane (F°)		
	68	104	68	104	68	104	68	104	
Mercuric Chloride Solution	2	•		•		•			
Mercuric Cyanide	2	2							
Mercuric Nitrate	2	2					2	2	
Mercury	2	2							
Mesitylene	4	4							
Mesityl Oxide	4	4							
Mesitylene	4	4							
Methanol	4	4	4	4	4	4	4	4	
Methyl Acetate	4	4							
Methyl Acetone	1								
Methyl Alcohol	3	4	2	3	3	4	4	4	
Methyl Bromide	4	4							
Methyl Butanathiol	4	4							
Methyl Butanol	1	4					4	4	
Methyl Chloride	4	4 4					4	4	
Methyl Chloroform	1	4							
Methyl Cyanise	4	4	2	3	3	4			
Methyl Ethyl Ketone	4	4		3	3	4			
Methyl Isobutenyl Ketone Methyl Isobutyl Ketone	4	4							
Methyl Isopropyl Ketone	4	4							
Methyl Methacrylate	1	7							
Methyl Methacrylate Monomer	4	4							
Methyl Propyl Ketone	4	4							
Methyl Slaicylate	1	7							
Methyl Sulfate	1								
Methylamine	4	4							
Methylaniline	4	4							
Methylene Bromide	4	4							
Methylene Chloride	4	4							
Methylene Dichloride	4	4							
Milk	1	1					1	1	
Mineral Oils	1	2	1	1	1	1	1	1	
Molasses	1	1	1	1	1	1	1	1	
Monochlorobenzene	4	4							
Monomethylamine	4	4							
Monosodium Phosphate	1								
Motor Oil	3								
Muriatic Acid	4	4							
N-Octane	4	4							
Naphthenic Acid	1								
Naptha	4	4	1	1					
Napthalene	3	4	1	1					
Nickel Chloride Solution	1	1					1	1	
Nickel Nitrate Solution	2						1	1	
Nickel Plating Solution	4	4							
Nickel Salts	2								
Nickel Sulfate Solution	1								
Nicotine	1	1			_		1	1	
Nicotine Acids	1	2	1	1	3	4	3	4	
Nicotine Salts	1								
Niter Cake	1	•		4					
Nitric Acid 10%	1	2		1	4	4	4	4	
Nitric Acid 40%	2	3	1	1	4	4	4	4	
Nitric Acid 60%	3	4	2	3	4	4	4	4	
Nitric Acid 68%	3	4	2	3	4	4	4	4	
Nitric Acid 70%	4	4	3	3	4	4	4	4	
Nitrobenzene	4	4					4	4	
Nitrogen	1	A							
Nitrogen Oxide	4	4							
Nitromethane	4 1	4							
Nitrous Acid (up to 10%)	1	1					1	1	
Nitrous Oxide	1	4	[				'	1	
Oats		4							

1-EXCELLENT

2-G00D

3-LIMITED

1-EXCELLENT	2-G00	D	3-LIMI1	r <b>ED</b>	4-UN	ISATISFA(	CTORY			
	Hose Construction									
Material Conveyed		with Temperature								
	PVC (F°)		TPR (F°)		TPE (F°)		Polyurethane (F°)			
	68	104	68	104	68	104	68	104		
Octadecanoic Acid	1							. • .		
Octanol	2									
Octyl Alcohol	2									
Oil of Turpentine	1									
Oils, Animal	2									
Oils, Mineral	4	4								
Oils, Petroleum	1	2	1	1	1	1	1	1		
Oleic Acid	2	3	1	1	4	4	4	4		
Oleum	4	4	4	4	4	4	4	4		
Olive Oil	2	2								
Ortho-Dichlorobenzene	4	4								
Ortho-xylene	4	4								
Oxalic Acid	4	4					4	1		
Oxygen	1 3	1 4					1	1		
Ozone Paint	1	4								
Para formaldehyde	1	2								
Paraffin	1	2								
Palmitic Acid 10%	1	2					4	4		
Palmitic Acid 70%	3	4					4	4		
Peaches	1	1						-		
Peanut Butter	1	2								
Peanut Oil	2									
Peas	1	1								
Pentachlorophenol in Oil	4	4								
Pentane	3	4								
Pentanone	4	4								
Pentasol	2									
Perchloric acid	4	4								
Perchloroethylene	4	4								
Petrol	4	4	4	4						
Petroleum Ether	3	3	1	1						
Petroleum Naptha	4	4								
Petroleum Oils (Refined)	1 2									
Petroleum Oils (Sour) Phenol	4	4								
Phenol Acid	4	4								
Phenyl Chloride	4	4								
Phenolhydrazine	4	4								
Phenolhydrazine Hydrochloride	3	4								
Phosgene (gas)	1	2								
Phosgene (liquid)	4	4								
Phosphorous (yellow)	2	3								
Phosphorous Pentoxide	4	4								
Phosphorous Trichloride	1	1					1	1		
Phosphorous Trichloride	1	1					1	1		
Photographic Chemicals	1	1					1	2		
Photographic Fixing Solutions	1	_						_		
Picric Acid	4	4	4	4	4	4	4	4		
Pinene	4	4		4						
Pitch	2	3 2	1	1			4	1		
Plating Solutions	1 2	2					1	1		
Polyethylene Glycol	1									
Potash  Retagium Asstate	1									
Potassium Acetate Potassium Acid Sulfate	1	1	1				1	1		
Potassium Actio Sulfate  Potassium Antimonate		1						1		
Potassium Bicarbonate	1	1	1	1	1	1	1	1		
Potassium Bichromate	1	1	1 .		·		1	1		
Potassium Bisulfate	1							•		
Potassium Bisulfite	1	1	1				1	1		
Potassium Borate 1%	1	1					1	1		
Potassium Bisulfate	1		1							
Potassium Bromate 10%	1	1	1	1	1	1	1	1		

1-EXCELLENT

2-GOOD

3-LIMITED

4-UNSATISFACTORY

1-EXCELLENT	2-G00	D	3-LIMI	TED	4-UN	ISATISF#	CTORY					
	Hose Construction											
Material Conveyed	with Temperature											
	PVC	(F°)	TPF	R (F°)	TPE	(F°)	Polyuret	hane (F°)				
	68	104	68	104	68	104	68	104				
Potassium Bromide	1	1	1	1	1	1	1	1				
Potassium Carbonate	1											
Potassium Chlorate	1											
Potassium Chloride	1	1	1	1	1	2	1	2				
Potassium Chromate	1						2	2				
Potassium Cuprocyanide	1							_				
Potassium Cyanide	1	1	1	1	1	1	1	1				
Potassium Dichromate	1	1					2	2				
Potassium Ferrocyanide	1	1	4	4	4	0	1	1				
Poassium Fluoride	1	1	1	1	1	2						
Potassium Hydrate	2	1										
Potassium Hydroxide	1	1					4	4				
Potassium Hypochlorite	2	3					4	4				
Potassium Iodide	1	1	1	1	4	1	1	1				
Potassium Nitrate	1	1	1 1	1 1	1 1	1 1	1	1				
Potassium Perborate	1	1	1	ı	ı	ı	2	3				
Potassium Perchlorite	4	4						3				
Potassium Permanganate	1	4										
Potassium Persulfate												
Potassium Sulfate	1	4	4	4	4	4	4	4				
Potassium Sulfide	1	1	1	1	1	1	1	1				
Potassium Sulfite	2											
Potassium Thiosulfate	1	4										
Potatoes	1	1		4		4	4	4				
Propane	1	1	1	1	1	1	1	1				
Propargyl Alcohol	1	1				•		•				
Propyl Alcohol	1	2	1	1	2	3	2	3				
Propylene Dichloride	4	4					4	4				
Propylene Glycol	1						4	4				
Prune Juice	1	1										
Puropale RX Oils	2	4										
Pyrene	4	4										
Pyrethrum	2	4										
Pyridine	4	4										
Pyrogard C, D	2											
Red Oil	2											
Regal Oils R&O	2											
Richfield A Weed Killer	1	2										
Rubilene Oils	2											
Salicylic Acid	1	_		_	_	_	_					
Salt Water	1	1	1	1	2	3	2	4				
Sauerkraut	2	_										
Selenic Acid	1	2					4	4				
Sewage	2											
Shortening	2	3										
Silicic Acid	1	1					4	4				
Silicone Greases	2											
Silicone Oils	2											
Silver Cyanide	1	1					1	1				
Silver Nitrate	1	1	1	1	1	1						
Silver Plating Solution	1	2	1	1	1	1	1	1				
Skydrol 500A & 7000	4	4										
Soap	1	1	1	1	2	3	2	4				
Soda Ash	1											
Soda Water	1	1										
Sodium Acetate	1	1					1	1				
Sodium Aliminate Solution	2		1									
Sodium Arsenite	1	1	1				1	1				
Sodium Benzoate	1	2	1	1	1	1	1	1				
Sodium Bicarbonate	1	1	1	1	1	1	1	1				
Sodium Bichromate Solution	2											
Sodium Bisufite	1		1									
Sodium Borate	1											
Sodium Bromide	1	1	1	1	1	2	1	2				

1-EXCELLENT

2-G00D

**3-LIMITED** 

4-UNSATISFACTORY

1-EXCELLENT	2-G001	ט	3-LIMI	IED	4-UN	5A I 15FA	CIORY	
				Hose Cor	nstruction			
Material Conveyed					nperature			
	PVC	( <b>F</b> °)	TPF	R (F°)	TPE	(F°)	Polyure	thane (F°)
	68	104	68	104	68	104	68	104
Sodium Carbonate (soda ash)	1	1	1	1	1	2	1	1
Sodium Chlorate	2	3	1	2	3	3	2	2
Sodium Chloride	1	1	1	1	1	2	1	2
Sodium Chlorite Solution	2							
Sodium Chromate	2							
Sodium Cyanide	1	1	1	1	1	1	1	1
Sodium Dichromate	1	2	1	2	1	2	1	2
Sodium Ferricyanide	1	1					1	1
Sodium Ferrocyanide	1	1					1	1
Sodium Fluoride (70%)	1	1					1	2
Sodium Hydrate	2							
Sodium Hydrochlorite	2							
Sodium Hydrosulfide	1							
Sodium Hydrosulfite	2							
Sodium Hydroxide 10%	1	1	1	1	3	4	3	4
Sodium Hydroxide 35%	1	2	1	1	4	4	4	4
Sodium Hydroxide 50%	1	3	1	2				
Sodium Hypochlorite (20%)	1	1					4	4
Sodium Hyposulfate	1							
Sodium Metaphosphate	1							
Sodium Nitrate	1	1					1	1
Sodium Nitrite	1	1					1	1
Sodium Peroxide	1							
Sodium Phosphate	1							
Sodium Phosphate Acid	2	2	1	2	4	4		
Sodium Silicate	1							
Sodium Sulfate	1							
Sodium Sulfhydrate	2							
Sodium Sulfide	1	1					1	1
Sodium Sulfite	1	1					1	1
Sodium Sulphrydate	2							
Sodium Thiosulfat	1	1					1	2
Solnus Oils	1							_
Sour Crude Oil	4	4						
Soya Beans	1	4						
Soya Oil	1	3						
Soybean Oil	1 1	1						
Spent Acid	4	4						
Spinach	1 1	1						
Squash	1	1						
Stannic Chloride	2							
Stannis Chloride	1	1	1	1	1	2	1	2
Starch	1 1		'		'	_	'	_
Starch Gum	1							
Stearic Acid	1							
Stoddard Solvent	2							
	2							
Straight Synthetic Oils	4	4						
Styrene	1	1						
Sugar - all forms	4	4						
Sulfamic Acid		4						
Sulfate Liquors under 150° F	1	2						
Sulfur	2	2	1					
Sulfur Chloride	2							
Sulfur Dioxide (dry)	1	4	1					
Sulfur Dioxide (liquid)	4	4						
Sulfur Hexafluoride (Gas)	2		1					
Sulfur Trioxide	1	_	1 .	_	_		_	
Sulfuric Acid 10%	1	2	1	1	3	4	3	4
Sulfuric Acid 70%	1	2	1	1	4	4	4	4
Sulfuric Acid 95%	3	3	1	2	4	4	4	4
Sulfurous Acid	2	3	1	2	4	4	4	4
Sulphur Dioxide Gas - dry	1	1			]			
Sulfur Dioxide Gas - wet	4	4	1					
Sulfur Diovide - Liquid	3	4					Ī	

1-EXCELLENT

2-GOOD

3-LIMITED

4-UNSATISFACTORY

1-EXCELLENT	2-G00	)D	3-LIMI	TED	4-UN	SATISFA	CTORY	
				Hose Cor	struction			
Material Conveyed				with Tem				
	PV	C (F°)	TPR	R (F°)		(F°)	Polyure	thane (F°)
	68	104	68	104	68	104	68	104
Sun R&O Oils	2							
Suntac HP Oils	2							
Suntac WR Oils	2							
Sunvis Oils 700, 800, 900	2							
Synthetic Oil (Citgo)	2							
Tall Oil	4	4						
Tallow	2							
Tannic Acid	1	1	1	1	3	4	3	4
Tanning Liquors	1	1						
Tar Oil	2							
Tartaric Acid	1	2	1	1	2	3	3	4
TEA (Triethanolamine)	2	3						
Tellus Oils	2							
Tenol Oils	2							
Terpineol	2							
Tetrachloroethane	4	4						
Tetraethyl Lead	2	3						
Tetrahydrofuran	4	4						
Tetrahydroxydicyclopentadiene	4	4						
THF (Tetrahydrofuran)	4	4						
Thionyl Chloride	4	4			,		4	4
Tin Chloride	1	1	1	1	1	1		
Titanium Tetrachloride	1	4	0	0	0	4	3	4
Toluene	4	4	2	2	3	4		
Toluol	4	4						
Tomatoes	1	1						
Tributyl Phosphate	4	4					0	4
Trichloroethylene	4	4					3	4
Trichloroethane	4	4					4	4
Tricresyl Phosphate	4	4					4	4
Triethanolamine	3 2	<b>4</b> 3						
Triethylamine	4	4						
Trihydroxybenzoic Acid	4	4						
Trimethylbenzene	3	4						
Trimethyl Propane	1	4						
Trinitrophenol	1	1	1	1	1	1	1	1
Trisodium Phosphate	2	'	'	'	'	'	'	'
Tung Oil Turpentine	3	4	1	1	2	3	1	2
Ucon Hydrolube Types 150CP, 200CP	2	7	'		2	3	'	2
Ucon Hydrolube Types 275CP,300CP, 550CP	2							
Ucon M1	2							
Union Hydraulic Tractor Fluid	2							
Urea	1	2	1	1	1	1	1	1
Urine	1	1	1	1	1	1	1	1
Varnish	4	4	1	1	1	2	1	2
Vegetable Oils	2	3				_		_
Versilube F-50, F-44	2	· ·						
Vinegar	1	2					2	3
Vinyl Acetate	4	4					4	4
Vinyl Chloride	4	4						-
Vinyl Trichloride	4	4						
Vitrea Oils	2							
Vodka	1	2						
Water Acid - mine water	1	1	1	1	3	4	2	4
Water in Oil Emulsions	1							
Water - distilled	1	1	1	1	3	4	2	4
Water - fresh	1	1	1	1	3	4	2	4
Water - salt	1	1	1	1	3	4	2	4
Whiskey	1	2						
White Gasoline	1	1	1	1	1	2	1	2
White Liquor (paper)	1	1						
Wines	1	2						

1-EXCELLENT 2-GOOD 3-LIMITED 4-UNSATISFACTORY

Material Conveyed	Hose Construction with Temperature									
	PVC	PVC (F°)		TPR (F°)		TPE (F°)		thane (F°)		
	68	104	68	104	68	104	68	104		
Wood Oil	1									
Xylene	4	4	1	1	2	3	2	3		
Xylol	4	4	1	1	2	3	2	3		
Yeast	1	2								
Yogurt	1	2								
Zeric	2									
Zinc Acetate	1									
Zinc Chloride Solutions	1									
Zinc Chromate	1	1	1	1	1	1	1	1		
Zinc Cyanide	1	1	1	1	1	1	1	1		
Zinc Hydrate	1									
Zinc Nitrate	1	1	1	1	1		1	1		
Zinc Sulfate	1	1	1	1	1	1	1	1		

**WARNING:** The following data has been compiled from generally available sources and should not be relied upon without consulting and following the hose manufacturer's specific chemical recommendations. Neglecting to do so might result in failure of the hose to fulfill it's intended purpose, and may result in possible damage to property and serious bodily injury.

	Resistance Rating									
	Metal		Non-Metal							
E	Excellent	Α	Acceptable							
G	Good	Х	Not Recommended							
F	Fair	С	Contact Factory							
X	Not Recommended									
С	Contact Factory									

- **1.** Ratings given are based at +70°F (+21°C). Chemical compatibility varies greatly with temperature. For applications at temperatures other than +70°F (+21°C), contact the manufacturer for recommendations.
- **2.** Chemical resistance of a material does not necessarily indicate the suitability of a fitting in a given application due to variables such as improper clamp and coupling application, special hose construction, gasket material, etc.

#### SPECIAL CAUTION SHOULD BE TAKEN WHEN HANDLING HAZARDOUS MATERIALS.

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
Absorption Oil		Е					
Acetal		Е					
Acetaldehyde	E	Е	Е	E	Е		E
Acetamide	Е	Х		G			
Acetate Solvents ( Crude)	E	Х	G	E	Е	Α	Х
Acetate Solvents ( Pure)	E	Е	X	E	E	Α	X
Acetic Acid (80%)	F	Х	Х	E	Е	х	Х
Acetic Acid (50%)	G	Х	X	G	Е	X	X
Acetic Acid (20%)	G	Х	Х	G	E	Х	Х
Acetic Acid (10%)	G	Χ	X	E	E	X	X
Acetic Anhydride	G	Х	G	G	G	х	Х
Acetic Ether	Е	Е	Е	Е	Е		G
Acetic Oxide	G	Х	Х	G	G		Х
Acetone	Е	G	G	Е	Е	Α	X
Acetophenone							G
Acetylene	Е	Х	G	Е	Е	X	X
Acetyl Oxide	G	Х	Х	G	G		Х
Acetylene Dichloride							X
Aeroshell 7A, 17 Grease	Е		Е	E	Е		
Air 212° F	Е	Е	Е	Е	Е		
Air, Ambient	Е	Е	Е	E	Е		Е
Aircraft Hydraulic Oil AA	Е	Е	Е	Е	Е		
Alachlor (Lasso)				E	Е		
Alcohol - Amyl	G	G	G	G	G	Α	X
Alcohol - Benzyl	G	G	G	E	Е	Α	Х
Alcohol - Butyl	Е	G	G	Е	Е	Χ	X
Alcohol - Diacetone	E	Е	G	G	G	Х	Х
Alcohol - Ethyl	Е	G	G	G	G	X	X
Alcohol - Hexyl	С	С	С	С	С	х	Х
Alcohol - Isobutyl	С	С	С	С	С	X	X
Alcohol - Isopropyl	G	G	G	G	G	х	Х
Alcohol - Methyl	G	G	G	G	G	Х	X
Alcohol - Octyl	С	С	С	С	С	Α	Х
Alcohol - Propyl	G	G	G	Е	Е	X	X
Alkyaryl Sulfonate			Е	E			
Allomalaic Acid Solution			Е	Е			
Allyl Chloride			Е	E			
Aluminum Acetate		Х		E	Е		
Aluminum Bromide		Х	Х	G	G		
Aluminum Chloride	X	Х	X	X	X	Α	Α
Aluminum Fluoride	G	С	Х	Х	G	Х	Α
Aluminum Nitrate	F	X	X	G	G	Α	Α
Aluminum Potassium Sulfate	G	G	Х	Х	G	Х	Α
Aluminum Salts	G	1		G	G	'	E
Aluminum Sulfate	Х	Х	Х	С	G	Α	A
Amines (Mixed)	X	X		Ē	-		

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
Aminoethanol		Е	E	E	E		Tropyicae
Ammonia Anhydrous	Е	X	E	G	E	Α	X
Ammonia Gas	Х	Х	Е	E	Е	Α	Х
Ammonia Nitrate	С	С	С	С	С	Х	С
Ammonium Acetate		Х		E	E		E
Ammonium Bifluoride	С	Х	X	С	С	Х	Α
Ammonium Carbonate	G	Х	G	G	G	Α	Α
Ammonium Casenate	С	С	С	С	С	Α	С
Ammonium Chloride	Х	Х	Х	Х	Х	Α	Α
Ammonium Hydroxide	G	Х	Е	G	G	Α	Α
Ammonium Metaphosphate	Х		Е	Е	Е		Е
Ammonium Nitrate	G	Х	X	С	С	Α	Α
Ammonium Nitrite				Е	Е		Е
Ammonium Persulfate		Х		E	E		X
Ammonium Phosphate	Х	Х	Х	Е	G	Α	Α
Ammonium Sulfate	X	Х	X	X	G	Α	Α
Ammonium Sulfide	Х	Х	Е	E	Е		E
Ammonium Thiocyanate			Е	Е	E		E
Amyl Acetate	Х	Е	Х	E	E		Х
Amyl Alcohol	Е	Е	Е	Е	E		
Amyl Chloride				E	E		Х
Amy Chloronapthalene				Е	E		
Amyl Napthalene				E	E		
Amyl Phenol				Е	E		
Anethole	G	Х	G	E	E		E
Aniline	С	Х	Х	E	E	Χ	Х
Aniline Hydrochloride		Х		Х	Х		G
Aniline Oil	G	Χ	G	E	E		E
Animal Fat (Lard)	E	Х	E	E	E		
Animal Gelatin				E	E		
Animal Oils	E		E	E	E		
Ant Oil	E	Е	G	E	E		G
Antifreeze	Е	Е	Е	E	Е		E
Aqua Ammonia		Χ	G	E	E		E
Aqua Regia				Х	Χ		Χ
Aromatic Hydrocarbons	G	G	E	E	E		
Arsenic Acid	G		G		E		G
Askarel (Transformer Oil)		Е	E	E	E		G
Asphalt	С	С	G	С	G	Χ	Χ
Asphalt (Cut Back)		Е	E	E	E		
ASTM Oil No. 1	E	Ε	E	E	E		G
ASTM Oil No. 2	E	Е	E	E	E		X
ASTM Oil No. 3	E	Е	E	E	E		X
ASTM Reference Fuel A	Е	Е	E	E	E		Χ
ASTM Reference Fuel B	E	Е	E	E	E		X
ASTM Reference Fuel C	Е	Е	Е	Е	Е		Χ

MATERIAL	Aluminum	Brass	Carbon	Stainless Steel, 304	Stainless Stain 216	Nylon	Poly-
Baltic Types 100, 150, 200, 300, 500			Steel	Steel, 304	Steel, 316		Propylene G
Banvel					Е		9
Bardol B			Е	Е	E		
		G		E	E		
Barite	V		E				
Barium Carbonate	Х	G	G	G	G	Α	Α
Barium Chloride	С	G	С	X	С	Α	Α
Barium Hydroxide	Х	G	G	G	G	Α	Α
Barium Sulfate	G	G	X	G	G	Α	Α
Barium Sulfide	Х	Х	G	G	G	Α	Α
Beer	Е	G	G	Е	E	Α	Α
Beet Sugar Liquors	Х		Х	Х	Х		Х
Bellows 80-20 Hydraulic Oil							Х
Benzaldehyde	G	G	Х	G	G	Х	Х
Benzene, Benzol	Е	G	G	G	G	Α	X
Benzenesulfonic Acid	х		х		G		E
Benzine	E	G	G	G	G	Α	X
Benzoic Acid	G	G	X	G	G	X	×
	G	G	E	G	E	^	E
Benzoic Aldehyde	_	_		_			
Benzol	E	Е	Е	Е	Е		Х
Benzyl Alcohol, Photo Inhibited			Е	Е	Е		Е
Benzyl Benzoate			Е	Е	Е		
Bismuth Carbonate			E	Е	E		E
Bitumastic		Е	E	Е	Е		
Black Liquor			Е	Е	Е		Е
Black Sulfate			Е	Е	Е		Е
Blast Furnace Gas		Е	Е	Е	Е		
Bleach	X	С	Х	С	х	Х	А
(12.5% active Chlorine)	^	Ĭ			^		
Borax	V	G	_	Е	Е		^
	X	G	G			X	Α
Bordeaux Mixture				Е	Е		
Boric Acid	Е	Х	X	С	С	Х	Α
Brake Fluid (Peteroleum Based)		E	E	Е	Е		Х
Brake Fluid (Synthetic Based)		Е	E	E	Е		
Brine Acid	E	Х	Х	С	С	Х	Α
Bromic Acid	X	X	С	С	С	X	Α
Bromine		Е	Е	Е	Е		Х
Bromine Liquid	G	С	С	X	X	Х	X
Bromochloromethane		Е	Е	Е	Е		х
Bunker Oil	Е	Е	Е	Е	Е		
Butadiene, Butylene	G	G	G	G	G	х	×
Butanal	G	E	G	G	G	^	^
	_		_		_		
Butane	G	G	Е	G	G	Х	Х
Butter Oil (Use FDA Hose)	Е	Е	Е	Е	Е	Ī	
Butyl Acetate	E	G	G	G	G	Α	Х
Butyl Alcohol	Е	Е	Е	Е	Е		E
Butyl Carbitol	E	Е	Е	E	Е		
Butyl Ether	Е	Е	Е	Е	Е	Ī	
Butyl Mercaptan				Е	Е		
Butyl Stearate	Е	Е	Е	Е	Е		
Butylamine	E	Е	Е	Е	E	Ī	х
Butyric Acid	G	G	X	G	G	Α	A
Cake Alum	X	X	X	X	G		E
		^					
Calcine Liquor	G	_ ا	E	E	E	Ī	
Calcium Acetate	E	Е	E	Е	Е		
Calcium Bisulfate	X	С	X	X	G	Х	Α
Calcium Bisulfide	С	С	С	С	G	Α	Α
Calcium Bisulfite	X	X	Х	С	G	X	Α
Calcium Bromide	Х	G	Х	Х	Х	Х	х
Calcium Carbonate	X	G	G	Е	G	Α	Α
Calcium Chlorate		ĺ		G	Е	Ī	Е
Calcium Chloride	С	G	G	C	С	Α	A
				E	E	,,,	E
Calcium Hydrogen Sulfite		V				Ī	
Calcium Hydrosulfide		X		G	E	۱.	E
Calcium Hydroxide	Х	G	G	G	G	Α	Α
Calcium Hypochlorite	X	X	X	X	G	X	Α
Calcium Metasilicate	Е	Е	E	E	E		E

	7-						
MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
alcium Oxide				5.55,501	G		
alcium Silicate	Е	Е	Е	Е	Е		
alcium Sulfate		Е	Е	Е	E		E
alcium Sulfide	G		Е	E	E		
aliche Liquors	G		Е	E	E		
ane Sugar Liquors	Е	G	Е	Е	Е		Е
arbolic Acid	G	Х	Х	Е	E		
arbolic Acid (Phenol)	G	Х	X	Е	Е		
Carbolic Acid (Phenol, 82-95% in Creosols)	G	Х	X	E	E		
arbon Bisulfide	E	X	G	G	G	A	X
arbon Dioxide - Dry	E	E	G	G	G	A	A
arbon Dioxide - Wet	E	X	F	G	G	X	A
arbon Disulfide	E	X	G	G	G	A	X
arbon Monoxide	E	E	G	E	E	A	A
arbon Tetrachloride arbonic Acid	X E	C G	G G	E G	C G	A X	X A
astor Oil	G	G	G	G	G	X	A
austic Potash	X	C	X	C	G	A	A
austic Soda	X	G	G	C	C	X	A
(see Sodium Hydroxide)	_ ^		,			^	^
rellosolves	G	G	G	G	G	Х	Α
ellosolve Acetate			E	E	E	^	E
rellosolve Butyl			E	E	E		E
thina Wood Oil	Е	Е	Е	E	E		_
hlorine - Liquid	С	С	G	С	F	Х	X
hlorine - Water				Х	Х		Е
hloroacetic Acid Solution		G	Х	X	X		Е
hlorobenzene	Е	Е	Е	Е	Е		Х
hlorobromomethane		Е	Е	Е	E		X
hloroform	С	С	Х	С	С	Х	Х
hloropentane				Е	Е		X
hloropropylene Oxide			Е				Е
hlorosulfonic Acid	С	Х	G	X	X	Х	X
hlorothene		Е		E	E		
hlorotoluene	Е	Е	Е	Е	Е		
lorox (5.5% bleach)	Х	С	Х	С	G	Χ	С
thromic Acid (50%)	G	X	Χ	F	С	Χ	X
thromium Trioxide	Х	Х	Х	Х	G		E
itric Acid	F	X	X	F	С	Х	X
oal Tar	E	Е	Е	E	E		
obalt Nickel Plating Solution					G		
ocoa Butter			Е	E	E		
od Liver Oil	Е	Е	Е	Е	Е		
oke Oven Gas	G	F	G	G	G	Х	Х
opper Arsenate		١	Ε	E	E		
copper Chloride	X	Х	X	Х	X	A	A
opper Cyanide	X	X	C	G	G	Х	С
Copper Nitrate		X	X	E	E		E
copper Sulfate	X	X	X	С	G	Α	A
forn Oil	E	Е	E	E	E		Х
forn Syrup	E	_	E	E	E		-
ottonseed Oil	E E	E	E G	E	E		E
reosote	E	^	G	E	E		G G
rotonic Acid	-		E	X	E.		G
rude Oil	Е	Е	E	E .	Е		Е
rude Wax	-	E	E	E	E		E
ryolite		E	E	E	E		X
rysylic Acid	G	G	G	G	G	Х	X
upric Arsenate			E	E	E	^	^
upric Nitrate		X	X	E	E		Е
cutting Oil (Mineral Oil Base)		E	E	E	E		X
cutting Oil, Sulfur Base		E	E	E	E		E
cutting Oil, Water Soluble		E	E	E	E		E
yanide, Copper		X		E	E		E
yanide, Mercuric	х						E
yanide, Silver	X	Х	G	Е	Е		Е

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene	MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
Cyanide, Sodium	Х	Х	G	Е	Е			Ethyl Acetate	С	С	G	G	G	Α	Х
Cyclohexane	G	G	G	G	G	Α	X	Ethyl Acetoacetate	Е	Е	Е	Е	Е		Х
Cyclohexanol							Е	Ethyl Alcohol	Е	G	Е	Е	Е		Е
Cyclohexanone	G			Е	Е		X	Ethyl Bromide		Е		Е	Е		
Cymene	Е	Е	Е	Е	Е			Ethyl Butyrate	Е			Е	Е		
Decalin		Е					Е	Ethyl Chloride	С	С	G	С	Е	Α	Х
Deicing Fluid	Е	Е	G	Е	Е		Е	Ethyl Ether	E	E	G	E	Е		Е
Denatured Alcohol	E	E	E	E	E		_	Ethyl Mercaptan		_	G				_
Detergents	G	G	G	Е	G	Α	Α	Ethyl Pentachlorobenzene		Е	G	Е	Е		
Developing Solutions		-	_	E	E			Ethyl Phthalate		Е		E	E		
Dextrin				E	E			Ethyl Silicate	Е	E	Е	E	E		
Dextrose	G	С	С	С	C	Α	Α	Ethylamine		Е	_	E	E		
Dextrose	G	С	С	С	С	Α	A	Ethylbenzene		E	Е	E	E		
Diacetone		E	E	E	E	, ,	E	Ethylcellulose		E	E	E	E		
Diacetone Alcohol	Е	E	E	E	E		E	Fatty Acids	Е	F	X	C	E	Α	Α
Diammonium Phosphate	x	-	X	G	E		E	Ferric Chloride	X	X	X	x	x	X	A
Diazinon	^		Α	G			G	Ferric Hydroxide	C	C	C	E	E	A	C
Dibenzyl Ether	E	Е	Е	Е	Е		G	Ferric Nitrate (10 - 50%)	X	Х	X	G	G	X	A
*	E		E									C	С	×	
Dibutyl Phthalate	-	E		E	E		G	Ferric Sulfate Ferrous Chloride	X X	X	X C	X	X	X	A A
Dibutylsebacate				_	_				_ ^	^				^	
Dichlorobenzene (ortho)		E		E	E			Ferrous Nitrate	_	_	v	E	E	V	E
Dichlorobenzene (para)		Е		Е	Е			Ferrous Sulfate	G	G	X	G	С	Х	A
Dichloroethylene		_	_	_	_		Х	Fertilizer	E	E	E	E	E		Е
Dichloromethane		Е	E	E	Е			Fire-Resistant Hydra-Fluid	Е	Е	Е	Е	Е		
Diesel Fuels	Е	Е	G	Е	Е	Α	Х	Fixing Solution (Photo)				E	E		E
Diethanolamine	E	Х	E	E	Е			Fluboric Acid	Х	С	Е	С	С	Х	Α
Diethanolamine - 20%	Е	х	E	E	E			Fluosilicic Acid	Е						Е
Diethyl Ether	Е	Е	G	Е	Е		Е	Formaldehyde (50%)	С	G	Х	E	E	Х	Α
Diethyl Phthalate		Е		E	Е			Formic Acid (Anhydrous)	Е	Х	Х	С	С	Х	Α
Diethyl Sebacate		Е		Е	Е			Freon 11	G	G	Х	G	G	Х	Х
Diethylamine	G	С	Х	G	G	Х	Α	Freon 12	G	G	Х	G	G	Х	X
Diethylene Dioxide	Е	Е	Е	Е	Е		Е	Freon 22	G	G	Х	G	G	Х	Х
Diethylene ether	Е	Е	E	E	Е		E	Fruit Juices	G	G	Х	G	G	Α	Α
Diethylene Glycol	Е	Е	Е	Е	Е		Е	Fuel Oil	G	G	G	G	G	Α	Х
Dihydroxyethyl Ether	Е	Е	Е	E	E		E	Fumaric Acid				Е	E		
Diisobutyl Ketone		Е	Е	Е	Е		Е	Furan	Е	Е	Е	Е	Е		
Diisobutylene		E		Е	Е			Furfural	G	G	G	G	G	Α	X
Diisopropyl Ketone		Е		Е	Е			Furfuran	Е	Е	E	E	Е		
Diisopropylidene Acetone		Е	Е	E	E			Fusel Oil	Е	Е	Е	Е	Е		
Dimethyl Aniline		Е						Fyrguard 150, 200	Е	Е	E	Е	Е		
Dimethyl Ether	E	Е	Е	E	E			Fyrquel 15R&O, 220R&O, 550R&O	Е		Е				
Dimethyl Formamide			Е	Е	E		E	Fyrquel 90, 150, 220, 300, 550, 1000	Е		E				
Dimethyl Phthalate		Е						Gallic Acid			Х	Е	Е		Е
Dimethylcarbinol	Е	G	Е	Е	Е		E	Gasohol	E	Е	G	Е	Е		Х
Dimethylformamide			Е	E	Е		E	Gasoline - Refined	G	G	G	G	G	Α	X
Dimethylketone	Е	Е	Е	Е	E		G	Gasoline - Sour	х	G	G	G	G	Α	Х
Dioctyl Phthalate	Е	Е	Е	E	Е		Х	Gasoline (Oxygenated- Blended with MTBE)	Е	Е	G	Е	Е		X
Dioxane	Е	Е	Е	Е	Е		E	Gelatin	G	G	Х	G	G	Α	Α
Dioxolane	Е	Е	Е	Е	Е			Glucose	G	G	G	G	G	Α	Α
Dipentene	Е	Е	Е	Е	Е			Glucose	E	Е	Е	E	E		
Dirco Oils	Е	Е	Е	E	E			Glue	G	G	G	С	G	С	Α
Disodium Phosphate	С	С	Е	С	Е	Α	Α	Glycerine	Е	Е	G	Е	Е	Α	Α
DMF ( Dimethylfomamide)			Е	E	Е		E	Glycerol	Е	Е	G	Е	Е		
Dowtherm A	Е	Е	Е	Е	Е			Glycols	G	G	G	G	G	Α	Α
Dowtherm SR-1	E	Е	G	E	E		E	Grease	Е	Е	Е	Е	Е		
Duro Oils	Е	Е	Е	Е	Е			Grease, Silicone Base	Е	Е	E	Е	Е		
Ehylene Chloride	С	С	G	С	С	Α	х	Green Liquor	С	С	G	С	С	С	Α
Ehylene Dichloride	С	G	G	G	G	Α	x	Green Sulfate Liquor		l	Е	Е	Е		
Ehylene Glycol	Е	G	G	G	G	Α	Х	Heptane	G	G	G	G	G	Α	X
Ehylene Oxide	Е	X	G	G	G	Х	X	Hexaldehyde	E	Е	Е	E	E		
Enamels		Е						Hexane	G	G	G	Е	Е	Α	X
Epichlrohydrin		-	Е				Е	Hexanol	E	G	E	E	E	1	
Essential Oils	Е	E	E	Е	Е		_	Hexene	-	E	E	E	E		
Ethanol	E	G	E	E	E		Е	Hexyl Alcohol	Е	G	E	E	E		
Ethanolamine	_	E	E	E	E		-	Hexylene	-	E	E	E	E		
Ethers	G	G	G	E	E	Α	X	Houghto-Safe 1055, 1110, 1115, 1120, 1130	Е	E	E	E	E		
	E	E	E	E	E	^	G	=	E	E	E	E	E		
Ethers							: • V	Houghto-Safe 271, 416, 520, & 616, 620						l	

MATERIAL	Aluminum	Brass	Carbon	Stainless Steel 304	Stainless Steel 316	Nylon	Propylene
Houghto-Safe 5048	E	Е	Steel E	Steel, 304	Steel, 316		Propylene
Houghto-Safe 625, 640 & 525 under 100°F	E	E	E	E	E		
HPO (Sodium Thiosulfate)	G	X	X	E	E		
Hy-Chock Oil			E	E	E		
Hydrafluid 760	Е	Е	E	E	E		
Hydrafluid AZR&O, A, B, AA, C	Е	_	Е	E	E		
Hydrasol A	E		E	E	E		
Hydraulic Fluid (Phosphate Ester Base)			Е	Е	Е		
Hydraulic Fluid (Polyalphaolifin)	Е	Е	Е	Е	Е		
Hydraulic Fluid (Std. Petroleum Oils)	Е	E	Е	E	E		
Hydraulic Fluid (Water Glycol Based)	Е	Е	Е	Е	Е		
Hydraulic Fluid HF-18, HF-20	Е	E	Е	E	E		
Hydraulic Fluid HF-31	Е	Е	Е	Е	Е		
Hydrobromic Acid - 20%	х	Х	Х	Х	х	х	Α
Hydrobromic Acid - 50%	X	Х	Х	X	х	Х	Α
Hydrochloric Acid - 20%	X	Х	Х	X	Х	х	Α
Hydrochloric Acid - 38%	X	X	X	X	X	X	A
Hydrocyanic Acid	G	X	G	G	G	x	A
Hydrofluosilicic Acid-10 -50%	X	G	X	X	G	X	C
Hydrogen Chloride (Dry Gas)	x	G	G	c	С	x	A
Hydrogen Fluoride	^		E	E	E	^	
Hydrogen Gas	E	Е	С	E	E	х	Α
	C	X	X	C	C	X	A
Hydrogen Peroxide - 50% Hydrogen Peroxide (35% or less)	E	X	X	G	E	^	А
Hydrogen Peroxide (50% or less)	E	X	X	G G	E E		
Hydrogen Peroxide (70% or less)				-			
Hydrogen Peroxide (90% or less)	E	X	X	G	E	.,	
Hydrogen Sulfide	С	С	С	X	G	Х	Α
Hydroquinine				E	E		
Hydroquinine Solution				E	E		
Hypo Chlorous Acid	X	X	X	X	X	Х	X
Ink (Printers)		G	G	G	E		
Ink Oil		Е	Е	Е	Е		
Insulating Oil		Е	Е	E	Е		
lodine	Е	Х	Х	X	Х	Х	Α
Iron Acetate Liquor			Е	Е	Е		E
Iron Sulfate Solution	Х	Х	X	Е	Е		Е
Isobutanol	E	G	Е	Е	Е		
Isobutyl Alcohol	Е	G	Е	Е	Е		
Isocyanate			Е	Е	Е		
Isooctane	G	Е	Е	Е	Е		
Isoproponal	E	G	Е	Е	E		Е
Isopropyl Acetate	Е	Е	Е	Е	Е		
Isopropyl Alcohol	E	G	Е	Е	Е		E
Isopropyl Ether	С	G	С	Е	G	Α	X
Isopropyltoluene	E	Е	Е	Е	E		
Jet Fuel (JP4, JP5)	G	Е	G	G	G	Х	X
Karo Syrup				E	Е		
Kerosene	G	G	G	G	G	Х	Χ
Ketchup				E	Е		
Ketones	G	G	G	G	G	Α	X
Lacquer - Alcohol or Acetate as Solvent	E	Е	Х	Х	Е		
Lacquer - Toluene or Xylene as Solvent	Е	Е	Х	Х	Е		
Lactic Acid (25%)	F	G	Х	С	С	Α	Α
Lactic Acid (80%)	G	G	Х	С	С	Α	Α
Lactol		Е	Е	Е	Е		
Lard Oil	G	С	F	G	G	Α	Α
Lasso				E	E		
Latex Paint	Е	Е	Е	E	E		
Lead Acetate	X	X	X	G	G	х	Α
Lead Chloride	X	C	C	G	G	X	C
Lead Nitrate Solution	^		E	E	E		
Lead Sulfate	x	С	X	G	G	Х	С
Lecithin	^		^	E	E	^	U
Lecitnin			G	E	E		
			G	- C			
Lime		1	1	l	G	i l	

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
Lime Sulfur Solution	Х	Х	G	E	E		rropylene
Lime Sulphur	Х	Х	Х	G	G	Х	Α
Lime, Chlorinated			Х	G	Е		
Limonene	Е	Е	Е	Е	Е		
Lindane				Е	Е		
Linseed Oil	G	G	G	G	G	Α	Α
Liquid Soap	E	Е	Е	E	Е		
Lonoleic Acid	G	Х	Х	G	G	Х	Α
Lubricants (oil)	G	Е	G	G	G	Α	Х
Machine Oil Under 135°F	E	Е	Е	E	E		
Magnesium Chloride	Х	Х	С	С	С	Х	Α
Magnesium Hydroxide	G	G	G	Е	Е	Х	Α
Magnesium Nitrate	G	G	G	G	G	Х	Α
Magnesium Oxide	С	С	С	С	С	Х	С
Magnesium Sulfate	G	С	С	G	G	Х	Α
Magnesium Carbonate	G	С	С	G	G	Х	Α
Malathion		Е	Е	E	Е		
Maleic Acid	С	G	Х	С	G	Х	Α
Maxmul			Е		Е		
MBK (Methyl Butyl Ketone)	Е	Е	Е	Е	Е		
Mecurious Nitrate Solution	Х		Е	E	Е		
MEK (Ethyl Methyl Ketone)	Е	Е	Е	Е	Е		
Mercuric Chloride	Х	Х	Х	Х	С	Х	Α
Mercuric Cyanide	X	Х	Х	G	G	X	Α
Mercury	Х	Х	G	Е	Е	Α	Α
Mesityl Oxide	Е	Е	Е	Е	Е		
Metallic Soaps	E	Е	E	E	Е		
Methane	Е	Е	G	Е	Е	Α	X
Methanol	G	G	G	G	G	Α	Α
Methoxychlor Solution			Е	Е	Е		
Methyamine			Е	E	Е		
Methyl Acetate	Е	Е	E	E	Е		
Methyl Acrylate	E	Е	Е	E	Е		
Methyl Alcohol	Е	G	Е	Е	Е		
Methyl Bromide	Х	С	G	G	G	Х	Х
Methyl Butyl Ketone	Е	E	Е	Е	Е		
Methyl Cyanide			Е	E	Е		
Methyl Ethyl Ketone	G	G	G	G	G	Α	X
Methyl Formate	E	Е	E	E	Е		
Methyl Isobutyl Ketone	G	G	G	G	G	Α	X
Methyl Metha crylate	G	С	Х	G	G	Х	Α
Methyl Nutanathiol				E	E		
Methyl Phenol	E	_	G	E	E		G
Methyl Salicylate	E	E	E	E	E		
Methylene Chloride	С	G	G	С	С	Α	Х
Methylene Dichloride	X	E	E	E	E	١.	
Milk	E	X	G	E	E	A	A
Mineral oil Mobile Therm 603	G	E	G	E	G	Α	Α
	E G	E	E	E	E		
Molasses Monochloroacetic Acid Solution	G	X G	G X	E X	E X		
		E	X E	X E	X E		
Monochlorobenzene  Monoethanolamine		E	E	E	E		
Monoethanolamine  Monomethylamine		_	E	E	E		
Monosodium Phosphate	х	Х	E	E	E		
Motor Oil	E	E	E	E	E		
Mould Oil	_	2	E	E	E		
Mouth Wash	Е	Е	E	E	E		
Muriatic Acid	X	C	C	X	X	х	Α
	^			X E	X E	_ ^	A
Mustard		Е	X G	E	E		
Napthalone						_	Α.
Napthalene	G G	G	G	E	E	A A	A X
Napthalene Nautral Oil	6	G	G	G	G	A	X
Neutral Oil	_	E	E	E	E		
Nickel Acetate	E	E	E	E	E	V	
Nickel Chloride	X	Х	Х	С	С	Х	Α
Nickel Nitrate	X	1	l	ı	G	ı	i

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly-	MAT
Nickel Plating Solution			Steel	Steel, 304	E		Propylene	Potash
Nickel Sulfate	х	х	С	G	G	х	Α	Potassium Acetate
Nicotine Salts			Е	Х	G			Potassium Bicarbonate
Niter Cake	Х	х	Х	E	E			Potassium Carbonate (
Nitogen, Liquid	E	Е	Е	Е	Е			Potassium Chlorate (30
Nitric Acid (100%)	E	Х	Х	G	С	Х	Х	Potassium Chloride (30
Nitric Acid (30%)	X	X	X	E	С	X	X	Potassium Chromate (
Nitric Acid (50%)	X E	X	X G	G	С	X A	X A	Potassium Cyanide (30
Nitrobenzene Nitroethane		G E	G	G E	G E	А	A	Potassium Dichromate  Potassium Hydroxide (
Nitrogen Gas	Е	E	Е	E	E			Potassium Nitrate (80%
Nitrogen Oxide	_	х	E	E	E			Potassium Permangan
Nitromethane		Е		Е	Е			Potassium Sulfate (109
Nitropropane		Е		Е	E			Propane
Nitrosyl Chloride				Е	Е			Propionic Acid
Nitrous Acid (Up to 10%)	Х	Х	Х	Е	Е			Propylene Glycol
Nitrous Oxide		Х	Е	Е	Е			Propylene Oxide (90%)
Octadecanoic Acid	Х	Х	Х	G	Е			Purina insecticide
Octanol	E	G	E	E	E			Puropale RX Oils
Octyl Alcohol	E	G G	E	E	E			Pydraul 10E, 29E-LT, 3
Oil - Castor Oil - Coconut	G G	C	G F	G G	G G	A A	A A	Pyrene
Oil - Corn	G	G	G	C	G	A	A	Pyridine  Pyragellia Asid
Oil - Cotton Seed	G	G	G	G	G	A	A	Pyrogallic Acid Pyroguard 160, 230, 63
Oil - Fuel	G	G	G	G	G	A	X	Pyroguard 51, 53, 55
Oil - Linseed	G	G	G	G	G	A	A	Pyroguard C, D
Oil - Mineral	G	Е	G	E	G	Α	Α	Quenching Oil
Oil - Silicon	G	Е	G	G	G	Α	Α	Quintolubric 822
Oil - Vegetable	G	G	G	Е	Е	Α	Х	Ramrod (Ag Spray)
Oils, Animal	Е	Е	Е	Е	Е			Rando Oils
Oleic Acid	G	F	G	С	Е	Α	X	Rapeseed Oil
Oleum	G	Х	G	G	G	Х	Х	Red Oil (MIL-5606)
Olive Oil	Е	G	G	Е	Е		Е	Refined Wax (Petroleu
Ortho-Dichlorobenzene		Е		Е	E			Regal Oils R&O
Oxalic Acid	G	С	X	X	X	X	A	Salicyclic Acid
Oxygen	G	G	G	G	G	Х	X	Salt Water
Ozone  Raint (inorgania)	E	E	E	E E	E E		Е	Sewage Silicone Greases
Paint (inorganic) Palm Oil	E	E	Е	E	E			Silicone Oils
Palmitic Acid	G	F	F	G	G	х	Α	Silver Nitrate
Paraffin	G	G	G	G	G	Α	Α	Skydrol 500A & 7000
Paraformaldehyde	Е			Е	Е			Soap Solutions
Peanut Oil	Е	Е	Е	Е	Е		Е	Soda Ash
Pentasol	Е	Е	Е	Е	Е			Sodium Acetate
Perchloric Acid			F	G	Е		Е	Sodium Bicarbonate - 2
Perchloroethylene	G	G	G	С	С	Х	Х	Sodium Bisulfate
Petrolatum	G	С	F	G	G	Α	С	Sodium Bisulfite
Petroleum Ether		Е	G	Е	Е			Sodium Borate
Phenol (Carbonic Acid)	E	E	F	C	E	Х	X	Sodium Carbonate
Phenyl Chloride	E	E	E	E	E		Х	Sodium Chlorate - 50%
Phorone Phosphoric Acid (25-50%)	Х	E X	E X	E C	E C	Х	Α	Sodium Chloride Sodium Chromate
Phosphoric Acid (50-85%)	X	X	X	C	C	X	A	Sodium Cyanide
Photographic Solutions	C	c	X	E	E	X	X	Sodium Dichromate
Phthalic Anhydride	С	G	G	E	E	X	X	Sodium Fluoride (70%)
Picric Acid	Е	х	Х	G	G	х	С	Sodium Hydrochloride
Plating Solutions - Brass	С	С	С	С	G	Х	Α	Sodium Hydroxide - 30
Plating Solutions - Cadmium	С	G	С	С	G	х	Α	Sodium Hydroxide - 50
Plating Solutions - Chrome (40%)	X	С	Х	G	G	Х	Α	Sodium Hydroxide - 70
Plating Solutions - Copper Cyanide	С	С	С	С	С	х	Α	Sodium Hydroxide (40°
Plating Solutions - Gold	С	С	С	С	Е	X	Α	Sodium Hypochlorite
Plating Solutions - Iron	С	С	С	С	С	Х	Α	Sodium Metaphosphat
Plating Solutions - Lead	С	С	С	Е	Е	Х	Α	Sodium Nitrate - 40%
Plating Solutions - Nickel	С	С	С	Е	Е	Х	Α	Sodium Perborate - 10
Plating Solutions - Silver	С	С	С	E	E	X	A	Sodium Perborate - 10
Plating Solutions - Tin	С	С	С	С	F	X	A	Sodium Peroxide - 10%
Plating Solutions - Zinc	С	С	С	С	С	X	A	Sodium Phosphate

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
Potash		Х	G	E	E		E
Potassium Acetate	X	X	G	C	C	Α	A
Potassium Bicarbonate (30%)	х	G	G	Е	E	Α	Α
Potassium Carbonate (50%)	X	G	G	E	E	Α	A
Potassium Chlorate (30%)	G	Х	G	G	Е	х	А
Potassium Chloride (30%)	X	X	G	С	C	Α	A
Potassium Chromate (30%)	G	G	С	G	G	X	A
Potassium Cyanide (30%)	X	X	G	G	G	X	A
Potassium Dichromate (30%)	E	G	G	E	E	X	A
Potassium Hydroxide (90%)	X	X	C	X	C	×	A
Potassium Nitrate (80%)	E	G	G	G	G	X	A
Potassium Permanganate (20%)	G	G	G	G	G	X	A
Potassium Sulfate (10%)	E	G	G	Е	E	Α	Α
Propane	Е	Е	G	G	G	Х	X
Propionic Acid			Е	Е			
Propylene Glycol	G	G	G	G	G	Α	Α
Propylene Oxide (90%)	С	С	С	Е	Е	Х	Х
Purina insecticide	Е	G	E	Е	Е		
Puropale RX Oils	Е	Е	E	Е	Е		
Pydraul 10E, 29E-LT, 30E, 60, 65E, 115SE	Е	Е	Е	Е	Е		
Pyrene	х	G	Х	G	G	Α	Х
Pyridine	G	G	G	G	G		Х
Pyrogallic Acid	G	G	G	G	G	х	Х
Pyroguard 160, 230, 630			E	E	E		
			E		E		
Pyroguard 51, 53, 55	_	_		E			
Pyroguard C, D	E	Е	Е	Е	E		
Quenching Oil	E			Е	E		
Quintolubric 822	Е	Е	Е	Е	Е		
Ramrod (Ag Spray)	E	Е	E	Е	Е		
Rando Oils	Е	Е	E	E	Е		
Rapeseed Oil	E	Е	E	Е	Е		
Red Oil (MIL-5606)	Е	G	G	G	Е		Е
Refined Wax (Petroleum)		Е	E	Е	Е		
Regal Oils R&O	Е	Е	Е	Е	Е		
Salicyclic Acid	G			Е	Е		
Salt Water		G	G	E	E		
Sewage	G	E	X	E	E		
<del>-</del>	G						
Silicone Greases		E	E	E	E		
Silicone Oils		Е	Е	Е	Е		
Silver Nitrate	X	Х	Х	G	Е	Х	Α
Skydrol 500A & 7000	E		Е	Е	Е		
Soap Solutions	G	G	G	G	G	Α	Α
Soda Ash	Х	G	E	Е	Е		Е
Sodium Acetate	Е	G	X	G	G	Α	Α
Sodium Bicarbonate - 20%	G	G	F	Е	Е	Α	Α
Sodium Bisulfate	Х	С	G	С	С	Α	Α
Sodium Bisulfite	х	G	Х	С	С	Α	Α
Sodium Borate	G	G	F	G	G	Α	Α
Sodium Carbonate	х	G	G	С	G	Α	A
Sodium Chlorate - 50%	G	G	X	G	G	X	A
	X		G	G		^	^
Sodium Chloride		X		-	E		
Sodium Chromate	X	X	G	Е	Е		
Sodium Cyanide	Х	Х	G	С	С	Α	Α
Sodium Dichromate	G	Х	G	G	G	Х	Α
Sodium Fluoride (70%)	1				G		
Sodium Hydrochloride - 30%	X	G	G	С	С	X	Α
Sodium Hydroxide - 30%	Х	G	G	Е	E	Х	Α
Sodium Hydroxide - 50%	Х	Х	F	Е	С	Х	Α
Sodium Hydroxide - 70%	х	Х	F	G	G	х	Α
Sodium Hydroxide (40%)	X	X	G	E	E		
Sodium Hypochlorite	X	X	X	С	C	х	А
• •							
Sodium Metaphosphate	X	X	X	G	G	X	X
Sodium Nitrate - 40%	E	G	G	Е	E	Α	Α
Sodium Perborate - 10%	G	Х	G	G	G	Х	Α
Sodium Perborate - 10%	G	Х	G	G	G	Х	Α
Sodium Peroxide - 10%	G	Χ	G	G	G	Χ	Α
0 " 5"	1		I	l –	I -	1	ı

MATEJAL					ıtınıyə	_	II a	
Sedum Silicate	MATERIAL	Aluminum	Brass				Nylon	
Sodium Suffide	Sodium Silicate	Е	G				Α	
Society	Sodium Sulfate	С	G	G	С	Е	Α	Α
Solitus Oils   Solyean Oil	Sodium Sulfide - 50%	X	Х	G	С	G	Х	Α
Soybean Oil         L         E <td< td=""><td>Sodium Thiosulphate</td><td>G</td><td>х</td><td>Х</td><td>G</td><td>G</td><td>Α</td><td>Α</td></td<>	Sodium Thiosulphate	G	х	Х	G	G	Α	Α
Spenit Acid	Solnus Oils	Е	Е	Е	Е	Е		
Stannic Chioride	•			Е				
Staurhous Chloride	•		١					_
Stauffer Jet 1								
Stauffer Jet     E		X	×	X			X	
Stauffer Jet 2		F	F	F				
Steam								
Stodard's Solvent	Steam						Х	С
STPP (Sodium Tripotyphosphate)	Stearic Acid	G	F	F	G	Е	Α	Α
Styrene   X	Stoddard's Solvent	G	G	G	G	G	Х	Α
Sugar Liquors (Beet)	STPP (Sodium Tripolyphosphate)	х	х		Е	Е		
Sugar Liquors (Beet)	Styrene	X	G	G	X	G		
Sugar Liquors (Cane)	Sucrose Solutions			Е	Е	Е		
Sulfate Liquors  Sulfate Liquors  X X X X X G G G X X X X X X G G G X X X X X X X X G G G X X X X X X X X G G G X X X X X X X X G G G X X X X X X X G G G X X X X X X X G G G G X X X X X X X G G G G X X X X X X X G G G G X X X X X X X X G G G G X	Sugar Liquors (Beet)	Е	G	G	Е	Е	Α	Α
Sulfite Liquors					-	-		
Sulfur Chloride	·							
Sulfur Dioxide (Dry)	·							
Sulfur Trioxide					-			
Sulfuric Acid - 100%								
Sulfuric Acid to 10%								
Suffurous Acid   G   G   X   X   C   X   A								
Sun R&O Oils								
Suntac HP Oils						-	^	**
Sunvis Oils 700, 800, 900   Synthetic Oil (Citgo)   E   E   E   E   E   E   E   E   E								
Synthetic Oil (Citgo)   Syrup   Syru	Suntac WR Oils	Е		Е		Е		
Syrup   Tail Oil   Tail Oil Under 150°F   Tail Oil Under 150°F   X	Sunvis Oils 700, 800, 900			Е	Е	Е		
Tall Oil   Tall Oil Under 150°F   Tallow   E	Synthetic Oil (Citgo)			Е	Е	Е		
Tall Oil under 150°F Tallow E G G G G G G G Tannic Acid X C X C X G G G X A Tanning Liiquors E C Tart Under 100°F E C Tartaric Acid C C C C E E E X A Tar Under 100°F E C Tartaric Acid C C C C E E E A A Tellus Oils E E E E E E E E Tenol Oils Tergitol G G G G C C E E E C C C E E E C C C C E E E C C C C E E E C C C C E E E C C C C E E E C C C C E E E C C C C E E E C C C C C E E E C C C C C E E E C C C C C E E E C C C C C C E E E C C C C C C E E E C C C C C C E E E C	Syrup			Е	Е	Е		
Tallow	Tall Oil				X	G		
Tannic Acid	Tall Oil under 150°F				Х	G		
Tanning Liquors								
Tar Under 100°F         E         G         E         E         E         A         A           Tartaric Acid         C         C         C         E<						-		
Tartaric Acid	= :						Х	Α
Tellus Oils								
Tenol Oils							А	А
Tergitol		_	_					
Tetrahydrofuran         X         C         E         1         G         A         X           Tetrahydrofuran (THF)         B         G         X         X         X           Theobromo Oil         E         E         E         E         E         E         E         C         G         X         X         X         X         Totuene         E			G					
Tetrahydrofuran (THF)		X					Α	×
Theobromo Oil   Titanium Tetrachloride					·	· ·	, ,	
Toluene	· ·			Е	Е	Е		
Toluene Diisocyanate   G	Titanium Tetrachloride	Х	х	G	С	G	х	х
Tomato Juice	Toluene	Е	Е	Е	Е	Е	Α	X
Transformer Oil (Askarel Types)	Toluene Diisocyanate			Е	Е	Е		
Transformer Oil (Petroleum Types)	Tomato Juice	G	С	F	G	G	Х	Α
Transmission Fluid         E         E         E         E         E         E         E         E         E         E         E         E         Tributoxyethyl Phosphate         X         E         E         C         C         C         A         X         X         Tributoryethylene         X         E         X         E         Tricesyl Phosphate         X         E         G         Tributonolamine         G         X         G         G         G         A         X         X         Tributhylamine         C         C         C         G         G         A         X         Tributhylamine         X         X         E         E         E         E         E         E         Tributhylamine         X         X         X         E         <	Transformer Oil (Askarel Types)		E	Е	Е	Е		G
Tributoxyethyl Phosphate         X         E         E         C         C         A         X           Trichloroethylene         E         C         G         C         C         A         X           Trichloroethylene         X         E         X         E         G         T         T         E         T         G         T         E         G         T         T         T         E         G         T         A         X         X         T	Transformer Oil (Petroleum Types)	Е	Е	Е	Е	E		
Tributyl Phosphate         X         E         C         C         A         X           Trichloroethylene         X         E         X         E         X         E           Tricresyl Phosphate         X         E         G         G         T         T         T         G         X         G         G         A         X         X         T			Е	Е	Е	Е		
Trichloroethylene								
Trichloroethylene	i i							
Tricresyl Phosphate					С		Α	X
Triethanolamine         G         X         G         G         G         A         X           Triethylamine         C         C         C         G         G         A         X           Trihydroxybenzoic Acid         X         X         E         E         E           Trinitriphenol         X         X         X         E         E           Trisodium Phosphate         X         G         G         E         E         A         A           Tung Oil         E         E         E         E         E         E			E					
Triethylamine         C         C         C         C         G         G         A         X           Trihydroxybenzoic Acid         X         X         E         E         E           Trinitriphenol         X         X         X         E         E           Trisodium Phosphate         X         G         G         E         E         A         A           Tung Oil         E         E         E         E         E         E								V
Trihydroxybenzoic Acid         X         E         E         E           Trinitriphenol         X         X         X         E         E           Trisodium Phosphate         X         G         G         E         E         A         A           Tung Oil         E         E         E         E         E         E								
Trinitriphenol         X         X         X         E         E           Trisodium Phosphate         X         G         G         E         E         A         A           Tung Oil         E         E         E         E         E         E	-						A	
Trisodium Phosphate         X         G         G         E         E         A         A           Tung Oil         E         E         E         E         E         E		¥	¥					
Tung Oil E E E E							А	А
							``	
	Turpentine	G	X	G			х	х

MATERIAL	Aluminum	Brass	Carbon Steel	Stainless Steel, 304	Stainless Steel, 316	Nylon	Poly- Propylene
Ucon Hydrolube Types 150CP, 200CP	Е	Е	Е	Е	Е		
Ucon M1	Е	Е	Е	Е	Е		
Union Hydraulic Tractor Fluid	Е	Е	Е	Е	Е		
Urea - 50%	G	С	G	G	G	Α	Α
Urine	С	С	G	Е	Е	Х	Α
Varnish		G	G	Е	Е		
Vegetable Oils	Е		Е	Е	Е		
Versilube F-50, F-44	Е	Е	Е	Е	Е		
Vinegar	G	Х	G	G	G	Х	Α
Vinyl Acetate	Е	G		Е	G		
Vinyl Chloride	Е	Х	G	Е	Е		
Vitrea Oils			Е	Е	Е		
VM&P Naptha	G	Е	Е	Е	Е		
Water (Distilled)	Х	G	Х	G	G	Α	Α
Water (Sea)	G	G	Χ	G	G	Α	Α
Water Acid (Mine)	Х	Х	Х	С	С	Х	Α
Whiskey	X	G	G	Е	Е	Х	Α
White Liquor	G	С	Х	G	G	Х	Α
Wine	X	G	Χ	Е	Е	Х	Α
Xylene	G	G	G	G	G	Α	Х
Zeric				Е	Е		
Zinc Chloride	Х	Х	Х	Х	G	Α	Α
Zinc Nitrate	С	С	С	G	G	Х	Α
Zinc Sulfate - 50%	Х	G	Х	E	Е	Х	Α

# TECHNICAL INFORMATION DECIMAL & MILLIMETER EQUIVALENTS OF FRACTIONS AND VACUUM CONVERSION TABLE

		h = 25.4		MILLI								
			•				1 inch = 25.4 millimeters					
		nal Inch	1		imal				nal Inch	1		imal
1/64	1/32	1/16	1/8	inch	mm		1/64	1/32	1/16	1/8	inch	mm
1				0.016	0.40		33				0.516	13.10
2	1			0.031	0.79		34	17			0.531	13.50
3				0.047	1.19		35				0.547	13.90
4	2	1		0.063	1.59		36	18	9		0.563	14.30
5				0.078	1.98		37				0.578	14.70
6	3			0.094	2.38		38	19			0.594	15.10
7				0.109	2.78		39				0.609	15.50
8	4	2	1	0.125	3.18		40	20	10	5	0.625	15.90
9				0.141	3.57		41				0.641	16.30
10	5			0.156	4.00	33	42	21			0.656	16.70
11				0.172	4.40	Ξ	43				0.672	17.10
12	6	3		0.188	4.80	٩E	44	22	11		0.688	17.50
13				0.203	5.20		45				0.703	17.90
14	7			0.219	5.60	¥	46	23			0.719	18.30
15				0.234	6.00	25.4 MILLIMETERS	47				0.734	18.70
16	8	4	2	0.250	6.40	25	48	24	12	6	0.750	19.10
17				0.266	6.70	Ш	49				0.766	19.50
18	9			0.281	7.10	INCH =	50	25			0.781	19.80
19				0.297	7.50		51				0.797	20.30
20	10	5		0.313	7.90	\-	52	26	13		0.813	20.60
21				0.328	8.30		53				0.828	21.00
22	11			0.344	8.70		54	27			0.844	21.40
23				0.359	9.10		55				0.859	21.80
24	12	6	3	0.375	9.50		56	28	14	7	0.875	22.20
25				0.391	9.90		57				0.891	22.60
26	13			0.406	10.30		58	29	1		0.906	23.00
27				0.422	10.70		59				0.922	23.40
28	14	7		0.438	11.10		60	30	15		0.938	23.80
29				0.453	11.50		61				0.953	24.20
30	15			0.469	11.90		62	31			0.969	24.60
31				0.484	12.30		63				0.984	25.00
32	16	8	4	0.500	12.70		64	32	16	8	1.000	25.40

	Vacuum Conversion Table For Water (Suction)							
ATM	PSI	Meter(s)	Feet	mm	In Hg	%		
0.1	1.40	1	3 ft. 3-3/8 in.	73.60	2.90	10		
0.2	2.80	2	6 ft. 6-3/4 in.	147.10	5.80	20		
0.3	4.20	3	9 ft. 10-1/8 in.	220.70	8.70	30		
0.4	5.70	4	13 ft. 1-1/2 in.	294.20	11.60	40		
0.5	7.10	5	16 ft. 4-13/16 in.	367.80	14.50	50		
0.6	8.50	6	19 ft. 8-3/16 in.	441.30	17.40	60		
0.7	10.00	7	22 ft. 11-9/16 in.	514.90	20.30	70		
0.8	11.40	8	26 ft. 2-15/16 in.	588.40	23.20	80		
0.9	12.80	9	29 ft. 6-3/8 in.	662.00	26.00	90		
1.0	14.20	10	32 ft. 9-11/16 in.	735.50	29.00	100		

## TECHNICAL INFORMATION TEMPERATURE CONVERSION

Look up reading in middle column (shaded). If in degrees Centigrade, read Farenheit equivalent in right-hand column; if in Farenheit degrees, read Centigrade equivalent in left-hand column.

°F = (°C x 1.8) +32

 $^{\circ}$ C = ( $^{\circ}$ F - 32) x .5556

•	С	_		C	_		C	_
С	F	F	С	F	F	С	F	F
-51	-60	-76	.6	33	91.4	22.2	72	161.6
-46	-50	-58	1.1	34	93.2	22.8	73	163.4
-40	-40	-40	1.7	35	95.0	23.3	74	165.2
-34	-30	-22	2.2	36	96.8	23.9	75	167.0
-29	-20	-4	2.8	37	98.6	24.4	76	168.8
-23	-10	14	3.3	38	100.4	25.0	77	170.6
-17.8	0	32	3.9	39	102.2	25.6	78	172.4
-17.2	1	33.8	4.4	40	104.0	26.1	79	174.2
-16.7	2	35.6	5.0	41	105.8	26.7	80	176.0
-16.1	3	37.4	5.6	42	107.6	27.2	81	177.8
-15.6	4	39.2	6.1	43	109.4	27.8	82	179.6
-15.0	5	41.0	6.7	44	111.2	28.3	83	181.4
-14.4	6	42.8	7.2	45	113.0	28.9	84	183.2
-13.9	7	44.6	7.8	46	114.8	29.4	85	185.0
-13.3	8	46.4	8.3	47	116.6	30.0	86	186.8
-12.8	9	48.2	8.9	48	118.4	30.6	87	188.6
-12.2	10	50.0	9.4	49	120.2	31.1	88	190.4
-11.7	11	51.8	10.0	50	122.0	31.7	89	192.2
-11.1	12	53.6	10.6	51	123.8	32.2	90	194.0
-10.6	13	55.4	11.1	52	125.6	32.8	91	195.8
-10.0	14	57.2	11.7	53	127.4	33.3	92	197.6
-9.4	15	59.0	12.2	54	129.2	33.9	93	199.4
-8.9	16	60.8	12.8	55	131.0	34.4	94	201.2
-8.3	17	62.6	13.3	56	132.8	35.0	95	203.0
-7.8	18	64.4	13.9	57	134.6	35.6	96	204.8
-7.2	19	66.2	14.4	58	136.4	36.1	97	206.6
-6.7	20	68.0	15.0	59	138.2	36.7	98	208.4
-6.1	21	69.8	15.6	60	140.0	37.2	99	210.2
-5.6	22	71.6	16.1	61	141.8	37.8	100	212.0
-5.0	23	73.4	16.7	62	143.6			
-4.4	24	75.2	17.2	63	145.4			
-3.9	25	77.0	17.8	64	147.2	43	110	230
-3.3	26	78.8	18.3	65	149.0	49	120	248
-2.8	27	80.6	18.9	66	150.8	54	130	266
-2.2	28	82.4	19.4	67	152.6	60	140	284
-1.7	29	84.2	20.0	68	154.4	66	150	302
-1.1	30	86.0	20.6	69	156.2	71	160	320
-0.6	31	87.7	21.1	70	158.0	77	170	338
0	32	89.6	21.7	71	159.8	82	180	356

# TECHNICAL INFORMATION CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY BY
ATMOSPHERES	cms of mercury	76
atmospheres	ft. of water (at 4°C)	33.9
atmospheres	in. of mercury (at 0°C)	29.92
atmospheres	kgs/sq cm	1.0333
atmospheres	kgs/sq meter	10.332
atmospheres	pounds/sq in	14.7
BAR	newtons/sq m	105
bar	atmospheres	0.9869
bar	at (tech.)	1.0197
bar	psi	14.504
BARRELS - OIL	gals/oil	42
BT UNITS	kg-calories	0.252
BTUs	ftlbs	777.9
BTUs	hp-hrs	3.927 x 10 <sup>-4</sup>
BTUs	kg-meters	107.5
BTUs	kw-hrs	2.928 x 10 <sup>-4</sup>
CENTIMETERS	inches	0.3937
cm	meters	0.01
cm	mm	10
CMS MERCURY	atm	0.3937
cms mercury	ft water	0.4461
cms mercury	kgs/sq meter	136
cms mercury	lbs/sq ft	27.85
cms mercury	lbs/sq in	0.1934
CMS/SECOND	ft/min	1.969
cms/sec	ft/sec	0.03281
cms/sec	km/hr	0.036
cms/sec	meter/min	0.6
cms/sec	miles/min	3.728 x 10 <sup>-4</sup>
CMS/SEC/SEC	ft/sec/sec	0.03281
CUBIC CMS	cu/ft	3.531 x 10 <sup>-5</sup>
cu cms	cu in	3.102 x 10 <sup>-2</sup>
cu cms	cu meters	106
cu cms	cu yards	1.308 x 10 <sup>-6</sup>
cu cms	gals	2.642 x 10 <sup>-4</sup>
cu cms	liters	10 <sup>-3</sup>
cu cms	pints (liq)	2.113 x 10 <sup>-3</sup>
cu cms	quarts (liq)	1.057 x 10 <sup>-3</sup>
CUBIC FEET	cubic cms	2.832 x 10 <sup>-4</sup>
cu ft	cu inches	1728
cu ft	cu meters	0.02832
cu ft	cu yards	0.03704
cu ft	gals	7.48052
cu ft	liters	28.32
cu ft	pints (liq)	59.48
cu ft	quarts (liq)	29.32

TO CONVERT	INTO	<b>MULTIPLY BY</b>
CUBIC FT/MIN	cu cms/sec	472
cu ft/min	gals/sec	0.1247
cu ft/min	liters/sec	0.472
cu ft/min	lbs water/min	62.43
cu ft/sec	gals/min	448.831
CUBIC INCHES	СС	16.39
cu ins	cu ft	5.787 x 10 <sup>-4</sup>
cu ins	cu meters	1.639 x 10 <sup>5</sup>
cu ins	cu yards	2.143 x 10 <sup>-5</sup>
cu ins	gals	4.329 x 10 <sup>-3</sup>
cu ins	liters	1.639 x 10 <sup>-2</sup>
cu ins	pints (liq)	0.03463
cu ins	quarts (liq)	0.01732
CUBIC METERS	СС	10 <sup>4</sup>
cu M	cu ft	35.31
cu M	cu meters	61.023
cu M	cu yards	1.308
cu M	gals	264.2
cu M	liters	103
cu M	pints (liq)	2113
cu M	quarts (liq)	1057
CUBIC YARDS	cu cms	7.646 x 10 <sup>5</sup>
cu yds	cu ft	27
cu yds	u ins	46,656
cu yds	cu meters	0.7645
cu yds	gals	202
DECIMETERS	meters	0.1
DEGREES (ANGLE)	minutes	60
degs (angle)	radians	0.01745
degs (angle)	secs	3600
DEGREES/SEC	radians/sec	0.01745
degs/sec	revs/min	0.1667
degs/sec	revs/sec	0.002778
FEET	cms	30.48
ft	ins	12
ft	meters	0.3048
ft	yds	1/3
FEET OF WATER	atms	0.0285
ft of w	ins mercury	0.8826
ft of w	kgs/sq cm	0.03048
ft of w	lbs/sq ft	62.32
ft of w	lbs/sq in	0.4328
FEET/MIN	cm/sec	0.508
ft/min	ft/sec	0.01667
ft/min	kms/hr	0.01829
ft/min	meters/min	0.3048
ft/min	miles/hr	0.01136

# TECHNICAL INFORMATION CONVERSION FACTORS

TO CONVERT	INTO	<b>MULTIPLY BY</b>
FT/SEC/SEC	cms/sec/sec	30.48
ft/sec/sec	meters/sec/sec	0.3048
FT - POUNDS	BTUs	1.286 x 10-3
ft lbs	hp/hrs	5.050 x 10-7
ft lbs	kg-calories	3.241 x 10-4
ft lbs	kg-meters	0.1383
ft lbs	kw-hrs	3.766 x 10-7
FT - LBS/MIN	BTUs/min	7.717 x 10-2
ft - Ibs/min	ftlbs/sec	0.01667
ft - Ibs/min	hp	3.030 x 10-5
ft - Ibs/min	kg-calories/min	3.241 x 10-3
ft - Ibs/min	kws	2.260 x 10-5
FT - LBS/SEC	BTUs/min	7.717 x 10-2
ft - lbs/sec	hp	1.818 x 10-3
ft - lbs/sec	kg-calories/min	1.945 x 10-2
ft - lbs/sec	kws	1.356 x 10-3
GALLONS	ccs	3785
gals	cu ft	0.1337
gals	cu ins	231
gals	cu meters	3.785 x 10-3
gals	liters	3.785
gals	pints (liq)	8
gals	quarts (liq)	4
GALLONS, IMP	US gals	1.20095
gallons, US	Imp gals	0.83267
GALLONS/MIN	cu ft/sec	2.225 x 10-3
gals/min	liters/sec	0.06308
gals/min	cu ft/hr	8.0208
HORSEPOWER	BTUs/min	42.44
Hp	ft-lbs/min	33,000
hp	ft-lbs/sec	550
hp	hp (metric)	1.104
hp	kg-calories/min	10.7
hp	kws	0.7457
hp	watts	745.7
HP - HOURS	BTUs	2547
hp-hrs	ft-lbs	1.98 x 108
hp-hrs	kg-calories	641.7
hp-hrs	kg-meters	2.737 x 105
hp-hrs INCHES	kw-hrs	0.7457 2.54
INCHES INS MERCURY	cms	0.002458
	atms ft-water	1.133
ins mercury ins mercury		0.03453
ins mercury	kgs/sq cm lbs/sq ft	70.73
ins mercury	lbs/sq in	70.73 0.4912
ino mercury	ibo/oq III	0.7014

TO CONVERT	INTO	<b>MULTIPLY BY</b>
INS OF WATER	atms	0.002458
ins of w	ft-water	0.07355
ins of w	kgs/sq cm	0.00254
ins of w	lbs/sq ft	5.202
ins of w	lbs/sq in	0.03613
KILOGRAMS	dynes	980,665
kgs	lbs	2.205
kgs	ton (short)	1.102 x 10-3
kgs	grams	1000
KGS/SQ CM	atms	0.9678
kgs/sq cm	ft-water	32.81
kgs/sq cm	ins mercury	28.96
kgs/sq cm	lbs/sq ft	2048
kgs/sq cm	lbs/sq in	14.22
KILOMETERS	cms	105
kms	ft	3281
kms	meters	103
kms	miles	0.6214
KMS/HR	cms/	27.78
kms/hr	ft/min	54.68
kms/hr	ft/sec	0.9113
kms/hr	meters/min	16.87
kms/hr	miles/hr	0.6214
KMS/HR/SEC	cms/sec/sec	27.78
kms/hr/sec	ft/sec/sec	0.9113
kms/hr/sec	meters/sec/sec	0.2778
KILOWATTS	BTUs/min	56.92
kws	ft-lbs/min	4.425 x 104
kws	ft-lbs/sec	737.6
kws	hp	1.341
kws	kg-calories/min	14.34
kws	watts	103
KILOWATTS – HOURS	BTUs	3415
kw-hrs	ft-lbs	2.655 x 106
kw-hrs	hp-hours	1.341
kw-hrs	kg-calories	860.5
kw-hrs	kw-meters	3.671 x 105
LITERS	ccs	103
liters	cu ft	0.03531
liters	cu ins	51.02
liters	cu meters	2-Oct
liters	gals	0.2642
liters	quarts (liq)	1.057
LITERS/MIN	gals/sec	4.403 x 10-3

# TECHNICAL INFORMATION CONVERSION FACTORS

TO CONVERT	INTO	MULTIPLY BY
METERS	cms	100
meters	ft.	3.281
meters	ins	39.37
meters	kms	103
meters	mms	103
meters/min	cms/sec	1.667
meters/min	ft./min	3.281
meters/min	ft/sec	0.05468
meters/min	kms/hr	0.06
meters/min	miles/hr	0.03728
METERS/SEC	ft/min	196.8
meters/sec	ft/sec	3281
meters/sec	kms/hr	3.6
meters/sec	kms/min	0.06
meters/sec	miles/hr	2.237
meters/sec	miles/min	0.03728
MICRON	meters	10-8
microns	in	39 x 10-6
MILES/HR	cms/sec	44.70
miles/hr	ft./min	88
miles/hr	ft/sec	1.467
miles/hr	kms/hr	1.609
miles/hr	meters/min	26.82
MILLIMETERS	cms	0.1
mms	ins	0.0397
MINUTES (ANGLE)	radians	2.909 x 10-4
NEWTON	kgs	0.1020
OUNCES	lbs	1.805
ozs	gram	28.349527
OUNCES (FLUID)	cu in	1.805
ozs (fluid)	liters	0.02957
POUNDS	ozs	16
lbs	tons (short)	0.005
lbs	newtons (N)	4.44
lbs	gram	453.5924
LBS OF WATER	cu ft	0.01605
lbs of water	cu in	27.73
lbs of water	gals	0.1204
LBS OF WATER/ MIN	cu ft/sec	2.679 x 10-4
POUNDS/CU FT	lbs/cu in	5.787 x 10-4
POUNDS/CU IN	lbs/cu ft	1728
POUNDS/SQ IN	atms	0.06804
lbs/sq in	ft water	2.311
lbs/sq in	in mercury	2.036
lbs/sq in	kgs/sq cm	0.07031

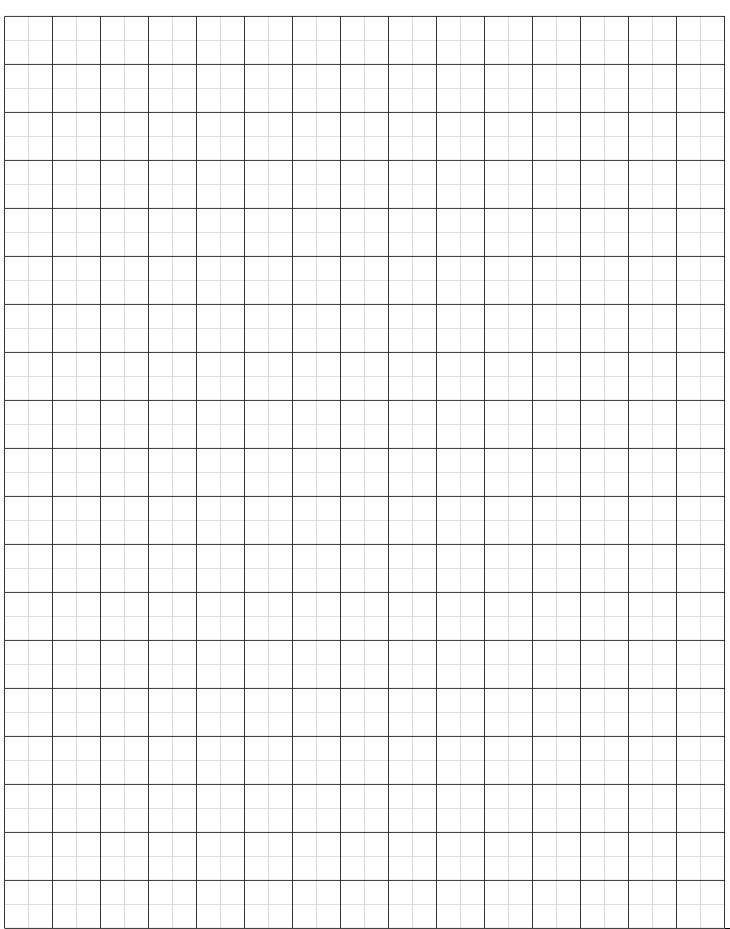
TO CONVERT	INTO	MULTIPLY BY
RADIANS	degrees	57.29578
TONS (LONG)	kgs	1016
tons (long)	lbs	2240
tons (long)	tons (short)	1.12000
TONS (SHORT)	kgs	2000
tons (short)	kps	907.18486
tons (short)	tons (long)	0.89287
tons (short	)tons (metric)	0.90718
WATTS	BTUs/min	0.05682
watts	ft-lbs/min	44.26
watts	ft-lbs/sec	0.7376
watts	hp	1.341 x 10-3
watts	kg-calories/min	0.01434
watts	kws	10
WATTS/HOURS	BTUs	3.415
watts/hours	ft-lbs	2655
watts/hours	hp-hrs	1.341 x 10-3
watts/hours	kg/calories	0.8605
watts/hours	kg-meters	367.1
watts/hours	kw-hrs	10-3

# TECHNICAL INFORMATION PRESSURE RATING CONVERSION

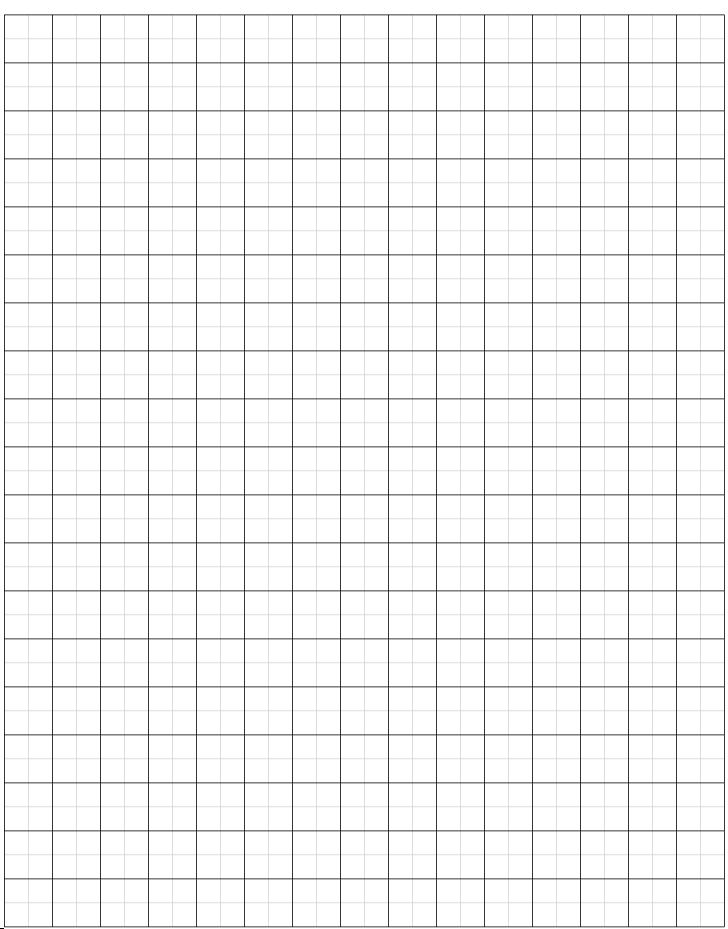
PSI to BAR - Conversion Table							
PSI	BAR	PSI	BAR	PSI	BAR		
1	0.07	30	2.07	210	14.48		
2	0.14	35	2.41	220	15.17		
3	0.21	40	2.76	230	15.86		
4	0.28	45	3.10	240	16.55		
5	0.34	50	3.45	250	17.24		
6	0.41	55	3.79	275	18.96		
7	0.48	60	4.14	300	20.68		
8	0.55	65	4.48	325	22.41		
9	0.62	70	4.83	350	24.13		
10	0.69	75	5.17	375	25.86		
11	0.76	80	5.52	400	27.58		
12	0.83	85	5.86	425	29.30		
13	0.90	90	6.21	450	31.03		
14	0.97	95	6.55	475	32.75		
15	1.03	100	6.89	500	34.47		
16	1.10	110	7.58	550	37.92		
17	1.17	120	8.27	600	41.37		
18	1.24	130	8.96	650	44.82		
19	1.31	140	9.65	700	48.26		
20	1.38	150	10.34	750	51.71		
21	1.45	160	11.03	800	55.16		
22	1.52	170	11.72	850	58.61		
23	1.59	180	12.41	900	62.05		
24	1.66	190	13.10	950	65.50		
25	1.72	200	13.79	1000	68.95		

BAR to PSI Conversion Table							
BAR	PSI	BAR	PSI	BAR	PSI		
1	14.50	30	435.10	210	3046.0		
2	29.01	35	507.60	220	3191.0		
3	43.51	40	580.20	230	3336.0		
4	58.02	45	652.70	240	3481.0		
5	72.52	50	725.20	250	3626.0		
6	87.02	55	797.70	275	3989.0		
7	101.50	60	870.20	300	4351.0		
8	116.00	65	942.70	325	4714.0		
9	130.50	70	1015.0	350	5076.0		
10	145.00	75	1088.0	375	5439.0		
11	159.50	80	1160.0	400	5802.0		
12	174.00	85	1233.0	425	6164.0		
13	188.50	90	1305.0	450	6527.0		
14	203.10	95	1378.0	475	6889.0		
15	217.60	100	1450.0	500	7252.0		
16	232.10	110	1595.0	550	7977.0		
17	246.60	120	1740.0	600	8702.0		
18	261.10	130	1885.0	650	9427.0		
19	275.60	140	2031.0	700	10153.0		
20	290.10	150	2176.0	750	10878.0		
21	304.60	160	2321.0	800	11603.0		
22	319.10	170	2466.0	850	12328.0		
23	333.60	180	2611.0	900	13053.0		
24	348.10	190	2756.0	950	13779.0		
25	362.60	200	2901.0	1000	14504.0		

### **NOTES**



### **NOTES**



## TERMS, CONDITIONS AND LIMITED WARRANTY OF SALE

All prices, terms and conditions of sale are subject to change without prior notice. Buyer agrees to all terms and conditions of seller upon the placement of any and all purchase orders.

#### **GENERAL**

- All orders are subject to a minimum charge of \$100.00.
- All claims must be made within seven (7) days of receipt of merchandise.
- The company reserves the right at all times to reject any and all orders for any reason.

#### **PAYMENT TERMS**

- Net 30 days (to approved and qualified accounts).
- We reserve the right to hold shipments against past due accounts.
- Seller may require full or partial payment in advance if, in its sole judgement, the financial condition of the buyer does not justify the terms specified.
- All past due accounts are subject to a late payment charge of 1.5% per month, or maximum allowed by law if different, along with the expenses incidental to collection including reasonable attorney's fees.
- Returned checks are subject to a minimum \$50.00 charge.

### ACCEPTANCE, ALTERATION AND CANCELLATION OF ORDERS

Orders for other than standard items or standard lengths may not be cancelled after purchase has been committed, production scheduled or any costs incurred.

#### **RETURN OF DEFECTIVE MERCHANDISE**

Defective or failed material to be held at the buyer's premises until authorization has been granted by seller to return or dispose of merchandise. Merchandise to be returned for final inspection must be returned Freight Prepaid in the most economical way. Credit will be issued for material found to be defective upon our inspection based on prices at time of purchase.

#### MERCHANDISE SHIPPED IN ERROR

Buyer must notify seller immediately on any merchandise shipped in error. Upon notification, merchandise is to be returned to seller either via truck on a Freight Collect basis, via carrier of our choice, or via UPS on a Freight Prepaid basis. Buyer will be reimbursed for cost of merchandise, plus any additional freight which may have been incurred due to shipping error.

#### **MERCHANDISE ORDERED IN ERROR**

Standard packaged merchandise only may be returned, provided that the merchandise is in the original buyer's possession not more than 30 days. If merchandise is accepted for return, merchandise must be returned Freight Prepaid, and buyer will be charged a minimum of 15% rehandling charge, plus a chargeback for outbound freight charges if the original order was shipped prepaid. Returns are not accepted for any merchandise that is specifically manufactured to meet the buyer's requirement of either specifications or large quantity.

#### **DELIVERY, DAMAGES, SHORTAGES**

Delivery to the initial common carrier shall constitute the delivery to the buyer. Our responsibility, insofar as transportation risks are concerned, ceases upon the delivery of the merchandise in good condition to such a carrier, and all the merchandise shall be shipped at the buyer's risk.

#### **GOODS DAMAGED IN SHIPMENT**

Upon receipt of shipment, any evidence of damage to original shipping package must be reported by the receiving party and a claim made with the delivering carrier upon receipt of shipment.

#### **CONCEALED DAMAGE**

Any evidence of damage to material shipped, upon the opening of the original shipping package, must be reported by the receiving party to and a claim made with the delivering carrier without delay.

#### LIMITED WARRANTY

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