



**IOCS S.r.L.**

*Hoses & Ancillaries Equipment Supply for Oil & Gas Industry*

# TABLES

## TABLES

### PRESSURE DROP

is calculated using the following formula

$$\Delta P = \frac{F \times L \times V^2 \times y}{2 \times g \times D \times 10000}$$

$$F = 5,7 \times \sqrt{(K/D)} + 1,7 \times \sqrt{(1/Re)} + 0,0096$$

$\Delta P$  = Pressure drop (kg/cm<sup>2</sup>)

F = Coefficient of hose friction

L = Length of hose string (m)

D = Internal diameter of hose (m)

$$V = \text{Flow velocity (m/s)} = \frac{4 \times Q}{3600 \times \pi \times D^2}$$

g = 9,81 m/s<sup>2</sup>

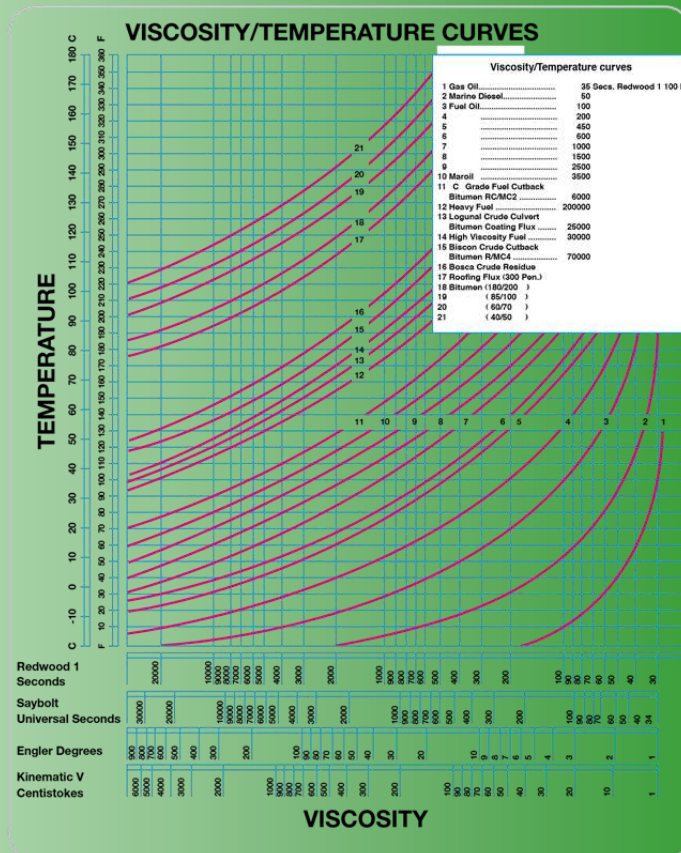
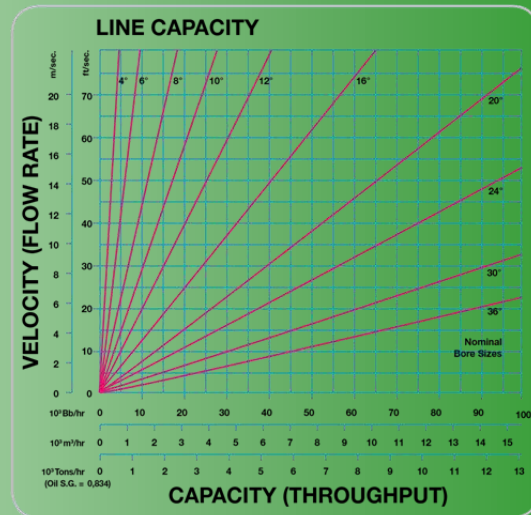
y = Specific gravity of oil (kg/m<sup>3</sup>)

Q = Flow quantity (m<sup>3</sup>/h)

$$Re = \text{Reynold's number} = \frac{D \times V}{\nu}$$

$\nu$  = Kinematic viscosity (Centistokes)

K = 0,3 x 10<sup>-6</sup> (experimental coefficient) - (m)

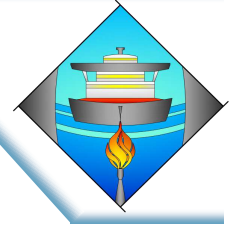


*Please do not hesitate to contact us in case you need more information or technical assistance.*



## Pressure Drop Table

Hose N.D. (Inch / mm)	VELOCITY (m/s)	FLOW RATE (m <sup>3</sup> /h)	Mbar/m	Hose N.D. (Inch / mm)	VELOCITY (m/s)	FLOW RATE (m <sup>3</sup> /h)	Mbar/m
4" / 100	3	90	6,66	12" / 300	3	750	1,69
	6	180	23,65		6	1550	6,45
	9	270	50		9	2300	13,42
	12	360	85		12	3100	23,39
	15	450	130		15	3900	35,94
	18	540	180		18	4650	50
	21	620	235		21	5400	66,24
6" / 150	3	190	4,22	16" / 400	3	1250	1,34
	6	380	15,03		6	2500	4,82
	9	570	31,79		9	3750	10,23
	12	760	54,24		12	5000	17,49
	15	950	82,22		15	6250	26,56
	18	1140	115,66		18	7500	37,4
	21	1300	148		21	8750	50
8" / 200	3	350	3,12	20" / 500	3	2000	1,02
	6	700	11,15		6	4000	3,68
	9	1000	21,58		9	6000	7,82
	12	1350	37,71		12	8000	13,37
	15	1700	58		15	10000	20,32
	18	2000	78,62		18	12000	28,62
	21	2350	106,44		21	14000	38,27
10" / 250	3	550	2,32	24" / 600	3	3000	0,86
	6	1100	8,32		6	6000	3,11
	9	1600	16,66		9	9000	6,61
	12	2150	28,87		12	12000	11,32
	15	2700	44,19		15	15000	17,21
	18	3200	66,19		18	18000	24,25
	21	3750	81,87		21	21000	32,43



# Pressure Drop in a Hose String

## PRESSURE DROP

is calculated using the following formula

$$\Delta P = \frac{F \times L \times V^2 \times y}{2 \times g \times D \times 10000}$$

$$F = 5,7 \times \sqrt{(K/D)} + 1,7 \times \sqrt{(1/Re)} + 0,0096$$

$\Delta P$  = Pressure drop (kg/cm<sup>2</sup>)

F = Coefficient of hose friction

L = Length of hose string (m)

D = Internal diameter of hose (m)

V = Flow velocity (m/s) =  $\frac{4 \times Q}{3600 \times \pi \times D^2}$

g = 9,81 m/s<sup>2</sup>

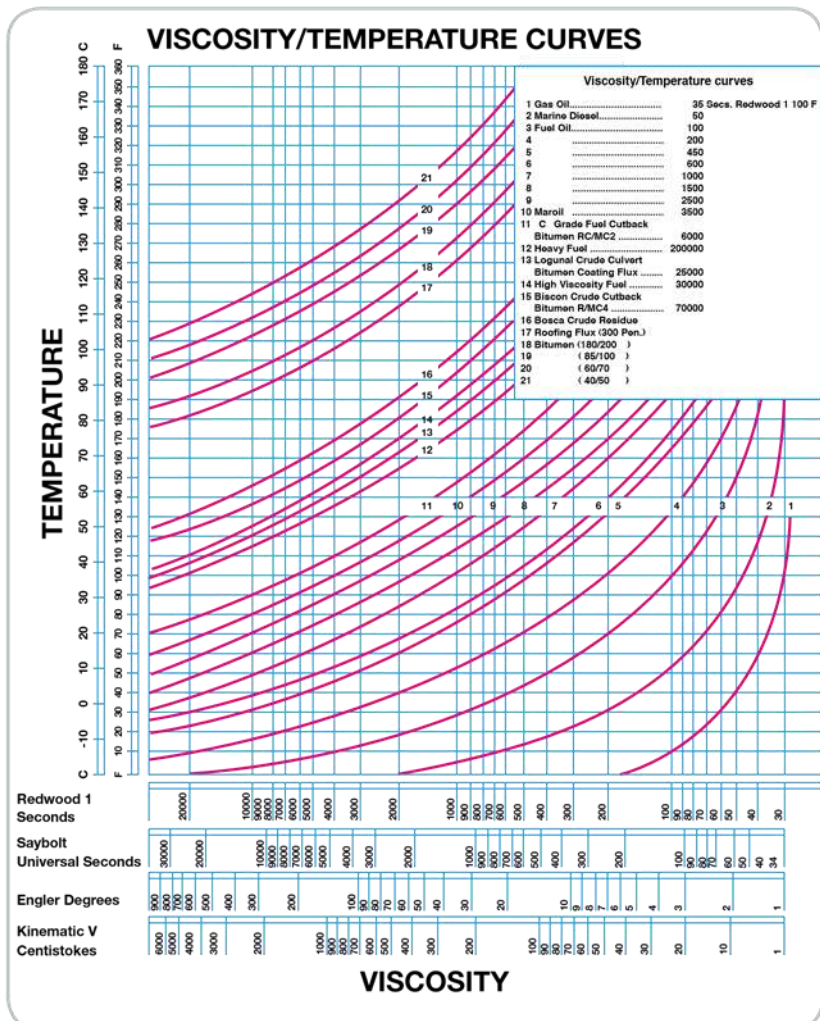
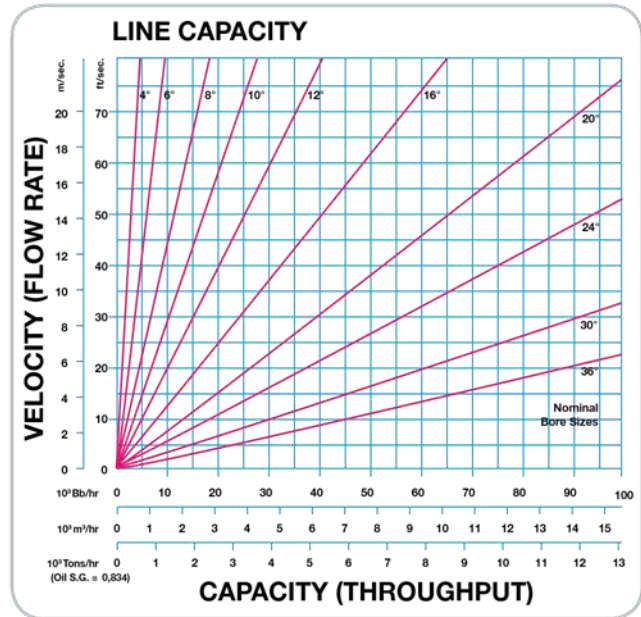
y = Specific gravity of oil (kg/m<sup>3</sup>)

Q = Flow quantity (m<sup>3</sup>/h)

Re = Reynold's number =  $\frac{D \times V}{\nu}$

$\nu$  = Kinematic viscosity (Centistokes)

K = 0,3 x 10<sup>-6</sup> (experimental coefficient) - (m)



Please do not hesitate to contact us in case you need more information or technical assistance.



# Conversion Table

Temperature Conversion Celsius to Fahrenheit															
°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
-50	-58	2	35.6	14	57.2	26	78.8	38	100.4	50	122.0	62	143.6	74	165.2
-40	-40	3	37.4	15	59.0	27	80.6	39	102.2	51	123.8	63	145.4	75	167.0
-30	-22	4	39.2	16	60.8	28	82.4	40	104.0	52	125.6	64	147.2	76	168.8
-20	-4	5	41.0	17	62.6	29	84.2	41	105.8	53	127.4	65	149.0	77	170.6
-10	14	6	42.8	18	64.4	30	86.0	42	107.6	54	129.2	66	150.8	78	172.4
-5	23.0	7	44.6	19	66.2	31	87.8	43	109.4	55	131.0	67	152.6	79	174.2
-4	24.8	8	46.4	20	68.0	32	89.6	44	111.2	56	132.8	68	154.4	80	176.0
-3	26.6	9	48.2	21	69.8	33	91.4	45	113.0	57	134.6	69	156.2	81	177.8
-2	28.4	10	50.0	22	71.6	34	93.2	46	114.8	58	136.4	70	158.0	82	179.6
-1	30.2	11	51.8	23	73.4	35	95.0	47	116.6	59	138.2	71	159.8	83	181.4
0	32	12	53.6	24	75.2	36	96.8	48	118.4	60	140.0	72	161.6	84	183.2
1	33.8	13	55.4	25	77.0	37	98.6	49	120.2	61	141.8	73	163.4	85	185.0

Pressure Conversion factors								
	lbf/sq.in. psi	kgf/cm <sup>2</sup>	bars	Atmospheres	mm/hg	in/hg	Feet head of water	Metres head of water
1 lbf/sq.in. (psi)	1	0.0703	0.069	0.068	51.71	2.036	2.307	0.7031
1 lbf/sq.in. (psi)	14.223	1	0.981	0.968	735.56	28.959	32.81	10.00
1 bar	14.504	1.020	1	0.97	750	29.53	33.4	10.2
1 Atmosphere	14.696	1.033	1.01	1	760	29.92	33.9	10.33
1 mm hg	0.0193	0.0014	0.0013	0.0013	1	0.0394	0.0446	0.0136
1 in hg	0.4912	0.0345	0.034	0.0334	24.49	1	1.133	0.3453
1 lt head of water	0.4335	0.0305	0.03	0.0295	22.45	0.8827	1	0.3048
1 m head of water	1.422	0.1000	0.0978	0.0968	73.56	2.896	3.281	1

S.I. Units Equivalents						
	lbf/sq.in. psi	kgf/cm <sup>2</sup>	Bar	NM <sup>-2</sup> = Pa	KPa Kilopascal	MPa megapascal
lbf/sq.in. (psi)	1	0.0703	0.069	6894.76	6.8948	0.0069
kgf/cm <sup>2</sup>	14.223	1	0.981	98066.5	98.07	0.098
Bar	14.504	1.020	1	10 <sup>5</sup>	10	0.1
NM <sup>-2</sup> = Pa	0.000145	1.02 x 10 <sup>-5</sup>	1 x 10 <sup>-5</sup>	1	10 <sup>-3</sup>	10 <sup>-6</sup>
KPa	0.145	0.0102	0.01	10 <sup>3</sup>	1	10 <sup>-3</sup>
MPa	145.04	10.197	10	10 <sup>6</sup>	10 <sup>3</sup>	1

Pressure Conversion											
lbf/sq.in.	kg/cm <sup>2</sup>	bar	lbf/sq.in.	kg/cm <sup>2</sup>	bar	lbf/sq.in.	kg/cm <sup>2</sup>	bar	lbf/sq.in.	kg/cm <sup>2</sup>	bar
25	1.757	1.725	325	22.847	22.425	850	59.755	58.650	6.000	421.800	414.000
50	3.515	3.450	350	24.605	24.150	900	63.270	62.100	6.500	456.950	448.500
75	5.272	5.175	375	26.362	25.875	950	66.785	66.550	7.000	492.100	483.000
100	7.030	6.900	400	28.120	27.600	1.000	70.300	69.000	7.500	527.250	517.500
125	8.787	8.625	450	31.635	31.050	1.500	105.450	103.500	8.000	562.250	552.000
150	10.545	10.350	500	35.150	34.500	2.000	140.600	138.000	9.000	632.700	621.000
175	12.302	12.075	550	38.655	37.950	2.500	175.750	172.500	10.000	703.000	690.000
200	14.060	13.800	600	42.180	41.400	3.000	210.900	207.000	11.000	773.300	759.000
225	15.817	15.525	650	45.695	44.850	4.000	281.200	276.000	12.000	843.600	828.000
250	17.575	17.250	700	49.210	48.300	4.500	316.350	310.500	13.000	913.900	897.000
275	19.332	18.975	750	52.725	51.750	5.000	351.500	345.000	14.000	984.200	966.000
300	21.090	20.700	800	56.240	55.200	5.500	386.650	379.500	16.000	1.054.500	1.035.000



# Specific Gravity

PRODUCT TYPE	TEMPERATURE (°C)	SPECIFIC GRAVITY (Kg/m³)
Acetic Acid	25	1,052
Acetone	25	0,787
Acetylene liquid	-85	0,62
Acetylene liquid	21	0,38
Adipic Acid		0,72
Alcohol Ethyl (Ethanol)	25	0,787
Alcohol Methyl(Methanol)	25	0,791
Alcohol Propyl	25	0,802
Ammonia (Aqua)	25	0,826
Aniline	25	1,022
Benzene	25	0,876
Benzil	25	1,084
Bromine	25	3,12
Butane liquid	25	0,601
Caproic Acid	25	0,924
Carbolic Acid	15	0,959
Carbon disulfide	25	1,265
Carbon tetrachloride	25	1,589
Carene	25	0,86
Oil Castrol	25	0,959
Chloride	25	1,56
Chloroform	25	1,469
Citric Acid	25	1,665
Coconut Oil	15	0,927
Cotton Seed Oil	15	0,929
Cresol	25	1,027
Cresote	15	1,07
Crude Oil California	16	0,918
Crude Oil Mexican	16	0,976
Crude Oil Texas	16	0,876
Cumene	25	0,862
Decane	25	0,728
Dodecane	25	0,757
Ethane	-89	0,572
Ether	25	0,716
Ethylamine	16	0,683
Ethylene Glycol	25	1,1
Fluorine (freon) R-11	25	1,48
Fluorine refrigerant R-12	25	1,315
Fluorine refrigerant R-22	25	1,197
Formaldehyde	45	0,815
Fuel Oil	16	0,893
Furan	25	1,421
Furfural	25	1,159
Gasoline Natural	16	0,713

PRODUCT TYPE	TEMPERATURE	SPECIFIC GRAVITY
Gasoline Vehicle	16	0,739
Glycerin	25	1,263
Glycerol	25	1,129
Heptane	25	0,681
Hexane	25	0,657
Hexanol	25	0,813
Hexene	25	0,673
Hydrazine	25	0,797
Kerosene	16	0,82
Linolenic Acid	25	0,902
Linseed Oil	25	0,932
Mercury	25	13,633
Methane	-164	0,466
Milk		1,035
Naphtha	15	0,667
Wood	25	0,701
Napthalene	25	0,963
Nonanol	25	0,823
Octane	25	0,701
Olive Oil	15	0,703
Oxygen	-183	1,14
Palmitic Acid	25	0,853
Pentane	25	0,755
Phenol	25	1,075
Phosgene	0	1,381
Phytadiene	25	0,826
Pinene	25	0,858
Propane	-40	0,585
Propane	25	0,495
Propylene	25	0,516
Propylene Glycol	25	1,036
Pyridine	25	0,968
Parole	25	0,969
Resorcinol	25	1,272
Sabiname	25	0,814
Sea Water	25	1,208
Silane	25	0,719
Sorbaldehyde	25	0,898
Stearic Acid	25	0,941
Styrene	25	0,906
Terpinene	25	0,85
Toluene	25	0,865
Turpentine	25	0,871
Water pure	4	1
Water sea	25	1,025



## Flow Units

<b>1 CUBIC METER / SECOND =</b>	<b>22.643</b>	<b>Barrel (oil) hour</b>
	<b>6,29</b>	<b>Barrel (oil) second</b>
	<b>3,6*10<sup>9</sup></b>	<b>Cubic centimeter/hour</b>
	<b>6*10<sup>7</sup></b>	<b>Cubic centimeter/minute</b>
	<b>10<sup>6</sup></b>	<b>Cubic centimeter/second</b>
	<b>127.133</b>	<b>Cubic feet/hour</b>
	<b>2.119</b>	<b>Cubic feet/minute</b>
	<b>35,3</b>	<b>Cubic feet/second</b>
	<b>3.600</b>	<b>Cubic meters/hour</b>
	<b>60</b>	<b>Cubic meters/minute</b>
	<b>4.709</b>	<b>Cubic yards/hour</b>
	<b>78,5</b>	<b>Cubic yards/minute</b>
	<b>1,31</b>	<b>Cubic yards/second</b>
	<b>13.198</b>	<b>Gallon water/minute (UK)</b>
	<b>15.850</b>	<b>Gallon water/minute (USA)</b>
	<b>951.019</b>	<b>Gallons (FI) /hour (USA)</b>
	<b>15.850</b>	<b>Gallons (FI)/minute (USA)</b>
	<b>264,2</b>	<b>Gallons (FI)/second (USA)</b>
	<b>19.005.330</b>	<b>Gallons / day (UK)</b>
	<b>791.889</b>	<b>Gallons / hour (UK)</b>
	<b>13.198</b>	<b>Gallons / minute (UK)</b>
	<b>219,97</b>	<b>Gallons / second (UK)</b>
	<b>3.600.000</b>	<b>Litre/hour</b>
	<b>60.000</b>	<b>Litre/minute</b>
<b>1.000</b>	<b>Litre/second</b>	
<b>131.981</b>	<b>Pounds water/minute</b>	
<b>86.400</b>	<b>Ton of water (metric)/24hrs</b>	



# Metals Equivalence and Comparison

Production From	ASME Spec.	ASME Grade	EN Spec.	EN Grade	ASTM	ASTM Grade	UNS	DIN	JIS	AISI	BS	NOTES & ASTM COMPARISON
Forging	SA 105	C	10222-2	1.0460	A105	C	K03504	C22.8	SFVC2A	1022M	1503-221-510	CARBON STEEL
Plate	SA 285	C	10028-2	1.0425	A285	C	K02801	H11	SB410	--	1501-161-400	CARBON STEEL
Plate	SA 516	60	10028	1.0436	A516	60	K02100	A St 45	SGV410	1330	1501-161-430A	CARBON STEEL
Plate	SA 516	70	10028	1.0843	A516	70	K02700	A St 52	SGV480	1330	1501-224-480A/B	CARBON STEEL
Plate	SA 529	D	10025-2	1.0044	A529	D	K02703	St 44-2	SS400	A573-81	43A	CARBON STEEL
Plate	SA 572	50	10025-2	1.0045	A572	50	K02306	St 52-3	SM490A	--	50B	CARBON STEEL
Bar	SA 105	C	10273	1.0460	A105	C	K03504	C22.8	SFVC2A	1022M	1503-221-510	CARBON STEEL
Pipes	SA 106	B	10216-2	1.0345	A106	B	K03006	St 45.8	STPT410	--	3062 HFS 410 cat.2	CARBON STEEL
Casting	SA 216	WCB	10213-2	1.0619	A216	WCB	J03002	GS-C 25	SCPH2	1030	1504-161 Gr. B	CARBON STEEL
Forging	SA 182	F316	10222-5	1.4401	A182	F316	S31600	X5CrNiMo 18-10	SUSF316	316	316S16	AUSTENITIC STAINLESS STEEL
Plate	SA 240	316	10028-7	1.4401	A240	316	S31600	X5CrNiMo 18-10	SUS316	316	316S16	AUSTENITIC STAINLESS STEEL
Bar	SA 479	316	10272	1.4401	A479	316	S31600	X5CrNiMo 18-10	SUS316	316	316S16	AUSTENITIC STAINLESS STEEL
Pipes	SA 312	TP316	10216-5	1.4401	A312	316	S31600	X5CrNiMo 18-10	SUS316TP	316	316S16	AUSTENITIC STAINLESS STEEL
Casting	SA 351	CF8M	10213-4	1.4408	A351	CF8M	J92900	GX5CrNiMo 19-11-2	SCS14A	316	316C16	AUSTENITIC STAINLESS STEEL Forging ASTM A182 F316
Bar	SA 276	304	--	--	A276-	304	S30400	X5CrNi 18-10	SUS304	304	304S31	STAINLESS STEEL
Bar	SA 276	304L	--	--	A276-	304L	S30403	X2CrNi 19-11	SUS304L	304L	304S11	STAINLESS STEEL
Bar	SA 276	316	--	--	A276-	316	S31600	X5CrNiMo 17-12-2	SUS316	316	316S31	STAINLESS STEEL
Bar	SA 276	316L	--	--	A276-	316L	S31603	X2CrNiMo 17-12-2	SUS316L	316L	316S11	STAINLESS STEEL
Casting	SB 148	--	--	--	B148	--	C95800	CuAl10Fe5Ni5-C	--	--	GC CC 333G	COPPER ALLOY
Forging	SB 564	N05500	--	2.4360	B564	N05500	N05500	17730 - BDIN 17743	--	--	3072-3076 NA18	ALLOY MONEL K500
Forging	SB 564	N04400	--	2.4360	B564	N04400	N04400	17730 - BDIN 17743	--	--	3072-3076 NA18	ALLOY MONEL 400

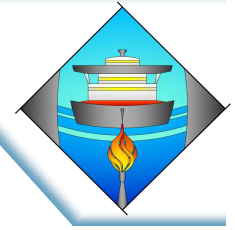


# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Acetaldehyde	3	2	2	1	2	2	3	2	3	3	1	1	1
Acetic Acid 10%	2	2	1	1	1	2	3	1	2	2	1	1	1
Acetic Acid 50%	3	3	2	1	2	2	3	1	2	2	1	1	1
Acetic Acid, glacial	3	3	2	1	2	3	3	2	3	3	1	1	1
Acetic Anidride	3	3	2	2	2	3	3	1	2	3	1	1	1
Acetone	3	3	1	1	1	3	3	1	3	3	1	1	1
Acetone cyanohidrin	-	-	1	1	2	-	-	-	-	-	1	1	1
Acetophenone	-	-	2	1	2	-	-	2	-	-	1	1	1
Acetyl Acetone	3	3	1	1	2	3	3	2	3	3	1	1	1
Acetyl chloride	3	3	2	2	2	3	3	1	3	1	1	2	1
Acetylene	1	1	1	1	1	2	1	1	1	1	1	1	1
Acetylene dichloride	3	3	3	3	3	3	3	3	3	1	1	2	1
Acqua regia	-	-	-	-	-	-	-	2	-	2	3	3	1/2
Acrolein	3	3	2	2	2	-	-	-	2	1	1	2	1
Acrylonitrile	-	-	3	3	3	-	-	1	-	3	1	2	1
Adipic acid	2	-	2	1	2	2	-	-	-	-	1	1	1
Air 160 °C	3	3	2	1	2	2	3	2	3	3	3	3	1
Air 60°C	1	1	1	1	1	1	1	1	1	1	1	1	1
Allyl acetate	-	-	-	-	-	-	-	-	-	2	1	1	1
Allyl Alcohol	1	1	1	1	1	-	1	1	1	1	1	1	1
Allyl bromide	-	-	-	-	-	-	-	2	-	2	1	2	1
Allyl chloride	-	-	-	-	-	-	-	2	-	2	1	2	1
Aluminium acetate	2	2	1	1	2	2	3	1	2	-	1	1	1
Aluminium chloride	1	1	1	1	1	1	1	1	1	1	1	1	1
Aluminium fluoride	1	2	1	1	1	1	1	1	1	2	1	1	1
Aluminium hydroxide	2	1	-	1	1	1	-	1	2	2	1	1	1
Aluminium nitrate	1	1	1	1	1	1	1	1	1	1	1	1	1
Aluminium sulfate	1	1	1	1	1	1	1	1	1	1	1	1	1
Aminobenzene	-	-	-	-	-	-	-	2	-	-	1	2	1
Aminoethanol	2	2	1	1	1	-	2	1	2	-	1	1	1
Ammonia anhydrous	3	3	3	3	3	3	3	2	3	-	2	2	1/2
Ammonia sol. 10%	2	2	1	1	1	1	-	1	1	-	1	1	1
Ammonia sol. 50%	2	2	1	1	-	1	-	1	1	-	1	1	1
Ammonium chloride	1	1	1	1	1	1	1	1	1	2	1	1	1
Ammonium hidroxide	2	2	2	1	-	1	-	1	2	3	1	1	1
Ammonium nitrate	2	2	1	1	1	1	1	1	1	-	1	1	1
Ammonium phosphate	1	1	1	1	1	1	1	1	1	-	1	1	1
Ammonium sulphate	1	1	1	1	1	1	1	1	1	-	1	1	1
Ammonium sulphite	1	1	1	1	1	-	-	1	1	-	1	1	1
Ammonium thiosulph.	1	1	1	1	1	-	-	1	1	-	1	1	1





# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Amyl acetate	3	3	3	3	2	2	-	-	-	-	1	1	1
Amyl acetone	3	3	3	3	3	3	-	-	-	-	1	1	1
Amyl alcohol	2	2	2	1	2	-	-	1	-	-	1	1	1
Amyl bromide	3	3	2	2	-	-	-	2	-	-	1	1	1
Amyl chloride	3	3	2	2	-	-	-	2	-	-	1	1	1
Amyl oleate	-	-	-	-	-	-	1	-	-	-	1	1	1
Amyl phenol	-	-	-	-	-	-	-	-	-	1	1	1	1
Amyl phthalate	-	-	2	1	2	-	-	-	-	2	1	1	1
Amylamine	2	2	2	1	1	-	-	2	-	-	1	1	1
Amylamine	2	2	-	1	2	-	-	-	3	-	1	1	1
Anethole	3	3	3	3	3	-	3	2	-	2	2	3	1
Aniline	3	3	2	1	2	-	-	2	-	2	1	1	1
Animal fats	3	3	3	3	1/2	2	1	1	2	1	1	1	1
Antimony pentachlorid	-	-	-	-	-	-	-	-	-	-	1	1	1
Aromatic tar	-	-	-	-	-	-	2	-	-	1	1	2	1
Arsenic acid	2	2	1	1	1	2	2	1	1	1	1	1	1
Ascorbic acid	-	-	-	1	-	-	-	1	-	-	1	1	1
Asphalt 130°C	-	-	-	-	-	-	3	-	-	2	3	3	1/2
Asphalt 80°C	-	-	-	-	-	-	1	-	-	1	3	2	1
ASTM FUEL A	3	3	3	3	3	3	1	1	2	1	1	1	1
ASTM FUEL B	3	3	3	3	3	3	1	2	2	1	1	1	1
ASTM FUEL C	3	3	3	3	3	3	1	3	3	1	2	2	1
ASTM OIL n°1	3	3	3	3	3	1	1	1	2	1	1	1	1
ASTM OIL n°2	3	3	3	3	3	2	1	1	2	1	1	1	1
ASTM OIL n°3	3	3	3	3	3	3	1	2	2	1	1	1	1
Banana oil	3	3	3	3	2	2	1	1	2	1	1	1	1
Barium carbonate	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium chloride	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium hydroxide	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium sulfide	1	1	1	1	1	1	1	1	1	1	1	1	1
Beer	2	1	2	2	1	2	2	2	2	2	1	1	1
Beet sugar liquors	2	1	2	2	1	2	2	2	2	2	1	1	1
Benzal chloride	-	-	-	2	-	-	-	-	-	-	1	1	1
Benzaldehyde	3	3	2	1	2	-	3	-	-	-	1	1	1
Benzene	3	3	3	3	3	3	3	3	3	1	1	2	1
Benzene carboxylic ac.	-	-	-	-	-	-	-	2	-	1	1	1	1
Benzene sulfon ac.10%	-	-	-	-	-	-	-	-	-	1	1	1	1
Benzine petrol ether	3	3	3	3	3	3	1	2	3	1	1	1	1
Benzine petrol naphtha	3	3	3	3	3	3	1	2	3	1	1	1	1
Benzoic acid	3	3	3	3	3	3	-	1	2	1	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Benzoic aldehyde	3	3	2	1	2	-	-	2	-	-	1	1	1
Benzotrichloride	-	-	-	-	-	-	-	-	-	-	2	3	1
Benzyl acetate	3	3	3	2	2	-	-	2	-	3	1	2	1
Benzyl alcohol	3	3	3	2	3	3	-	1	-	1	1	1	1
Benzyl chloride	-	-	-	2	-	-	-	-	-	2	1	2	1
Bichromate of soda	-	-	-	2	-	-	-	-	-	-	1	1	1
Black sulphate liquor	-	-	-	1	1	1	-	-	-	1	1	1	1
Bleach (2-12% chlorine)	-	-	-	2	-	-	-	-	-	2	1	2	1
Bordeaux mixture	-	-	1	1	1	-	-	1	1	1	1	1	1
Boric acid	1	-	1	1	1	1	-	1	1	1	1	1	1
Brine	1	1	1	1	1	1	-	1	1	1	1	1	1
Bromic acid	-	-	-	-	-	-	-	-	-	2	3	3	1/2
Bromine	3	3	3	3	3	3	3	3	3	2	3	3	1/2
Bromobenzene	3	3	3	3	3	3	3	3	3	2	3	3	1/2
Bromochloromethane	3	3	3	2	-	3	3	2	-	-	2	2	1
Bromoethane	3	3	3	-	-	-	3	2	-	-	-	-	1
Bromotoluene	3	3	3	3	3	3	3	3	3	2	-	-	1
Bunker oil	3	3	3	3	3	2	1	2	-	1	1	1	1
Butadiene	3	3	3	3	3	3	3	3	3	2	1	1	1
Butane	3	3	3	2	2	2	1	2	2	1	1	1	1
Butanoic acid	-	-	-	2	-	-	-	1	-	1	1	-	1
Butanol	1	1	1	1	1	1	1	1	1	1	1	1	1
Butanone	-	-	-	-	-	-	-	-	-	-	1	1	1
Butoxiethanol	-	-	-	1	-	-	-	1	-	-	1	-	1
Butyl acetate	3	3	-	2	2	-	-	2	-	3	1	1	1
Butyl acrylate	3	3	3	3	3	3	-	2	3	3	1	2	1
Butyl alcohol	1	1	1	1	1	1	1	1	1	1	1	1	1
Butyl aldehyde	-	-	2	1	2	-	-	-	-	-	1	1	1
Butyl amine	-	-	2	1	2	-	2	2	-	-	1	1	1
Butyl benzene	-	-	-	-	-	-	-	-	-	1	1	1	1
Butyl benzoate	-	-	-	2	-	-	-	-	-	1	1	-	1
Butyl bromide	3	3	3	3	3	3	3	3	3	2	2	-	1
Butyl butyrate	-	-	-	-	-	-	-	-	-	-	2	-	1
Butyl carbitol	3	3	2	1	-	-	-	-	3	1	1	1	1
Butyl cellosolve	3	3	2	1	2	2	3	1	2	3	1	1	1
Butyl chloride	3	3	3	-	-	3	3	3	-	2	2	-	1
Butyl ether	3	3	-	-	-	2	3	2	-	-	1	1	1
Butyl ether acetaldehy	-	-	-	1	2	-	-	-	-	-	1	-	1
Butyl ethil ether	3	3	-	2	-	-	3	-	3	-	1	-	1
Butyl glicol	-	-	2	1	-	-	-	-	-	-	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

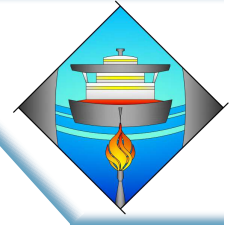
FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Butyl oleate	3	3	-	2	2	-	3	-	-	1	1	-	1
Butyl Phenol	-	-	-	-	-	-	-	-	-	1	1	1	1
Butyl phthalate	3	3	-	2	2	-	-	-	-	2	1	1	1
Butyl stearate	3	3	3	3	3	3	2	2	3	3	1	1	1
Butylene	-	-	3	3	-	3	2	3	-	1	-	-	1
Butyraldehyde	3	3	2	1	2	-	3	-	-	3	1	1	1
Butyric acid	3	3	-	2	-	-	3	2	-	2	1	1	1
Butyric anhydride	-	-	-	-	-	-	-	-	2	-	1	-	1
Cadmium acetate	3	3	2	2	-	-	-	1	-	-	1	1	1
Calcium acetate	3	3	2	1	2	2	-	1	3	3	1	1	1
Calcium aluminate	1	1	1	1	-	1	-	1	1	1	1	1	1
Calcium Bichromate	-	-	2	1	2	-	-	1	1	-	1	-	1
Calcium bisulphite	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium carbonate	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium chloride	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium hydroxide	2	1	1	1	1	-	-	1	2	1	1	1	1
Calcium hypochlorite	3	3	2	1	2	-	3	1	-	-	1	1	1
Calcium nitrate	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium sulfide	1	1	1	1	1	1	-	1	1	1	1	1	1
Calcium sulphate	1	1	1	1	1	1	1	1	1	1	1	1	1
Caprylic acid	3	3	-	2	-	-	-	2	-	-	1	1	1
Carbamide	-	-	-	1	-	-	-	1	-	-	1	1	1
Carbitol	-	-	2	1	2	2	-	1	-	-	1	1	1
Carbolic acid phenol	-	-	-	2	2	-	-	1	-	1	1	1	1
Carbon dioxide	1	1	1	1	1	1	1	1	1	1	1	1	1
Carbon disulfide	3	3	3	3	-	-	-	-	-	1	2	2	2
Carbon tetrachloride	3	3	3	3	3	3	-	-	-	1	1	2	1
Carbon tetrafluoride	-	-	-	-	2	-	-	-	-	-	1	1	1
Carbonic acid	1	1	1	1	1	-	-	1	1	-	1	1	1
Castor oil	2	-	-	-	2	1	1	1	1	1	1	1	1
Caustic potash	2	1	1	1	1	2	2	1	-	-	1	1	1
Caustic soda	2	1	1	1	1	2	2	1	-	-	1	1	1
Cellosolve	-	-	2	1	1	-	2	-	-	-	1	1	1
Cellosolve acetate	3	3	-	2	2	-	-	-	-	-	1	1	1
Chlorinated solvents	3	3	3	3	-	3	3	-	-	1	1	1	1
Chlorine (dry)	3	3	3	3	3	3	3	3	3	1	2	2	1/2
Chlorine (wet)	3	3	3	3	3	3	3	3	3	1	2	2	1
Chlorine trifluoride	3	3	3	3	3	3	3	3	3	1	2	2	1
Chloroacetic acid	3	3	2	1	2	-	-	-	-	3	1	1	1
Chloroacetone	3	3	2	1	2	-	-	-	-	3	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Chlorobenzene	3	3	3	3	3	3	3	3	-	1	1	1	1
Chlorobenzol	3	3	3	-	-	-	-	-	-	1	1	1	1
Chlorobromomethane	-	-	-	-	-	-	-	-	-	-	1	1	1
Chlorobutane	3	3	3	-	2	-	-	-	-	1	2	2	1
Chloroform	3	3	-	-	-	-	-	-	-	1	2	2	1
Chloropentane	3	3	3	3	3	3	-	-	-	1	1	1	1
Chlorosulfonic acid	3	3	3	3	3	3	3	3	3	3	2	3	1/2
Chlorotoluene	3	3	3	3	3	3	3	3	3	2	2	3	1/2
Chrome plating solutio	3	3	-	2	-	-	-	-	-	1	1	2	1
Chromic acid	3	3	-	2	-	3	3	2	-	1	1	1	1
Chromosulfuric acid	3	3	3	3	3	3	3	3	3	-	2	3	1
Citric acid	1	1	1	1	1	1	1	1	1	-	1	1	1
Coal oil	3	3	3	3	3	3	1	3	3	1	1	1	1
Coal tar	3	3	3	3	3	3	1	3	3	1	1	1	1
Coconut oil	3	3	3	3	2	3	1	-	-	-	1	1	1
Coke oven gas	3	3	3	3	3	3	2	3	-	1	1	1	1
Copper chloride	2	2	1	1	1	1	2	1	1	1	1	1	1
Copper cyanide	2	2	1	1	1	1	-	1	1	1	1	1	1
Copper hydrate	-	-	-	1	1	-	-	-	2	-	1	1	1
Copper hydroxide	-	-	2	1	1	-	-	1	2	-	1	1	1
Copper nitrate	1	2	1	1	1	1	-	1	1	1	1	1	1
Copper sulphate	1	2	1	1	1	1	-	1	1	1	1	1	1
Corn oil	3	3	3	3	1	2	1	-	-	1	1	1	1
Cottonseed oil	3	3	3	3	3	-	-	-	-	1	1	1	1
Creosote	3	3	3	3	3	-	2	-	-	1	1	1	1
Cresols	3	3	3	3	3	3	-	2	-	1	1	1	1
Cresylic acid	3	3	3	3	3	3	-	-	-	1	1	1	1
Crotonaldehyde	3	3	2	1	2	3	-	1	-	3	1	1	1
Crude oil	3	3	3	3	3	3	1	-	-	1	1	1	1
Cumene	3	3	3	3	3	3	2	3	3	1	1	1	1
Cupric carbonate	2	2	1	1	1	1	1	1	1	1	1	1	1
Cupric nitrate	1	2	1	1	1	1	1	1	1	1	1	1	1
Cupric sulphate	1	2	1	1	1	1	1	1	1	1	1	1	1
Cutting oil	3	3	3	3	-	2	1	-	-	1	1	1	1
Cyclohexane	3	3	3	3	-	-	1	1	-	-	1	1	1
Cyclohexanol	3	3	-	2	-	-	-	1	-	1	1	1	1
Cyclohexanone	3	3	3	2	3	3	3	2	3	3	1	1	1
Cyclopentane	3	3	3	3	3	3	-	3	3	1	1	1	1
Cyclopentanol	3	3	2	1	-	-	-	1	-	2	1	1	1
Cyclopentanone	3	3	-	2	-	-	-	2	-	3	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

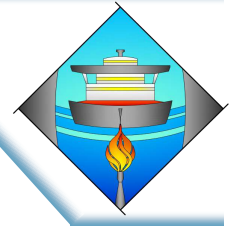
FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Decahydronaphthalene	-	-	-	-	-	-	-	-	-	-	1	1	1
Decalin	3	3	3	3	3	3	3	3	3	1	1	1	1
Decanol	-	-	2	1	2	-	1	1	-	2	1	1	1
Decyl alcohol	1	1	1	1	1	-	-	1	-	-	1	1	1
Decyl aldehyde	-	-	2	1	1	-	-	-	-	2	1	1	1
Decyl butyl phthalate	3	3	-	1	1	-	2	-	-	2	1	1	1
Decyl carbinol	-	-	-	2	-	-	-	1	-	-	1	-	1
Denatured alcohol	1	1	1	1	1	1	-	1	1	2	1	1	1
Detergents (water)	2	2	1	1	1	2	1	-	-	1	1	1	1
Developer sol. (photo)	2	2	-	-	2	1	1	-	1	-	1	1	1
Diacetone alcohol	2	2	-	1	1	-	-	1	2	2	1	1	1
Diamyl naphthalene	3	3	-	-	2	-	-	-	-	2	1	1	1
Diamyl Phenol	3	3	3	3	3	3	-	-	-	1	1	1	1
Diamylamine	2	3	2	1	2	-	-	1	-	-	1	1	1
Diamylene	3	3	3	-	3	3	-	-	-	1	1	1	1
Dibenzyl ether	3	3	3	2	2	-	-	-	-	-	1	-	1
Dibromobenzene	3	3	3	3	3	3	3	3	-	1	1	1	1
Dibromoethane	3	3	3	3	3	3	3	3	3	-	1	1	1
Dibutyl amine	3	3	-	2	3	3	-	1	3	-	-	-	1
Dibutyl ether	3	3	-	2	2	-	-	1	-	-	1	1	1
Dibutyl Phthalate	3	3	-	2	2	-	3	-	3	-	1	1	1
Dibutyl sebacate	3	3	-	1	2	-	-	1	3	-	1	1	1
Dicalcium phosphate	1	1	1	1	1	1	1	1	1	1	1	1	1
Dichloroacetic acid	3	3	-	2	-	3	3	-	3	3	1	1	1
Dichlorobenzene	3	3	3	3	3	3	3	3	3	1	1	1	1
Dichlorobutane	3	3	3	3	3	3	-	-	3	1	1	-	1
Dichlorodifluorometh.	3	3	3	3	3	3	3	3	3	2	-	-	1
Dichloroethane	3	3	3	3	3	3	-	-	-	1	1	1	1
Dichloroethyl ether	3	3	3	-	3	3	3	2	3	-	1	1	1
Dichloroethylene	3	3	3	3	3	3	3	3	3	1	2	2	1
Dichlorohexane	3	3	3	3	3	3	3	-	-	1	1	1	1
Dichloromethane	3	3	3	3	3	3	3	-	-	1	1	1	1
Dichloropropane	3	3	3	3	3	3	3	-	-	1	1	-	1
Dichloropropene	3	3	3	3	3	3	3	-	-	1	2	2	1
Dichloropentane	3	3	3	3	3	3	3	-	-	1	1	-	1
Diesel oil	3	3	3	3	3	3	1	2	-	1	1	1	1
Diethanolamine	2	2	1	1	1	2	2	1	2	-	1	1	1
Diethyl carbinol	-	-	1	1	1	-	-	1	-	-	1	1	1
Diethyl ether	3	3	-	2	-	-	-	1	-	3	1	1	1
Diethyl ketone	3	3	2	1	2	3	-	-	-	3	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Dimethyl phenol	3	3	3	3	3	3	3	3	3	1	-	-	1
Dimethyl phthalate	3	3	-	2	2	-	-	1	-	2	1	1	1
Dimethyl sul fate	3	3	-	3	3	-	-	1	-	-	1	1	1
Dimethyl sulfoxide	3	3	-	-	-	-	-	-	-	-	1	1	1
Dinitrobenzene	3	3	-	2	2	-	-	-	-	1	1	1	1
Diocetyl adipate	3	3	-	1	1	-	2	-	-	2	1	1	1
Diocetyl phthalate	3	3	-	1	1	-	-	-	-	2	1	1	1
Dioxane	3	3	2	2	2	-	3	2	-	3	1	1	1
Dioxolane	3	3	3	2	3	-	-	2	-	3	1	1	1
Dipentene	3	3	-	-	-	-	-	2	-	1	-	-	1
Diphenyl phthalate	3	3	-	1	-	-	-	-	-	-	1	1	1
Dipropylamine	2	2	2	1	1	-	2	1	2	-	1	1	1
Dipropylene glicol	1	1	1	1	1	-	1	1	1	1	1	1	1
Disodium phosphate	1	1	1	1	1	-	1	1	1	-	1	1	1
Divinyl benzene	3	3	3	3	3	3	3	3	3	1	1	1	1
Dodecyl benzene	3	3	3	3	3	3	3	3	3	1	1	1	1
Dowper	3	3	3	3	3	-	2	-	-	1	1	1	1
Dowtherm A and E	3	3	3	3	3	3	3	3	-	1	1	1	1
Dry cleaning fluids	-	-	-	-	-	-	2	-	-	1	-	-	1
Ethanol	1	1	1	1	1	1	1	1	1	2	1	1	1
Ethanol amine	2	2	1	1	1	2	2	1	3	3	1	1	1
Ethyl acetate	3	3	-	2	2	3	3	2	3	3	1	1	1
Ethyl acetoacetate	3	3	-	2	2	3	3	2	3	3	1	1	1
Ethyl acetone	3	3	-	1	2	3	3	2	3	3	1	1	1
Ethyl acrylate	3	3	-	2	2	3	3	2	3	3	2	1	1
Ethyl Al dichloride	3	3	-	-	-	-	-	-	-	2	1	1	1
Ethyl aldehyde	-	-	2	1	1	-	-	-	-	3	1	1	1
Ethyl amine	-	-	2	1	1	2	-	1	-	-	1	1	1
Ethyl benzene	3	3	3	3	3	3	2/3	3	3	1	1	1	1
Ethyl bromide	3	3	3	3	3	3	2/3	-	-	1	1	1	1
Ethyl butyl acetate	3	3	2	1/2	1/2	-	-	2	-	3	1	1	1
Ethyl butyl alcohol	1/2	1/2	1	1	1	-	1/2	1/2	1	2	1	1	1
Ethyl butyl amine	2	2	1/2	1	1	-	2	1	2	2	1	1	1
Ethyl butyl ketone	3	3	2	1/2	1/2	-	-	-	2	3	1	1	1
Ethyl butyrate	3	3	-	1/2	-	-	-	-	-	3	1	1	1
Ethyl cellulose	2	2	2	1/2	2	2	-	1/2	2	3	1	1	1
Ethyl chloride	3	3	3	2/3	2/3	-	-	2/3	-	1/2	1	1	1
Ethyl dichloride	3	3	3	3	3	-	-	2/3	-	2	1	1	1
Ethyl ether	3	3	-	2	-	-	-	1/2	-	3	1	1	1
Ethyl formate	3	3	-	2	2	2	-	1/2	3	3	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Ethyl iodide	3	3	-	-	-	-	-	2/3	-	2	2	2	1
Ethyl phthalate	-	-	-	2/3	-	-	-	2	-	-	1	1	1
Ethylbutyraldehyde	3	3	-	1	1	-	-	1/2	3	3	1	1	1
Ethylene chlorohydrine	2/3	2/3	-	2	2	3	3	2	2	1	1	1	1
Ethylene diamine	2	2	1/2	1	1	1	-	2	2	3	1	1	1
Ethylene dibromide	3	3	3	2/3	3	3	-	2/3	3	1/2	2	2	1
Ethylene dichloride	3	3	3	3	3	3	-	3	3	1/2	2	2	1
Ethylene glycol	1	1	1	1	1	1	1	1	1	1	1	1	1
Ethylene oxide gas	-	-	3	3	3	-	-	-	-	3	1	1	1
Fatty acids	3	3	3	3	3	2/3	2/3	2	3	1	1	1	1
Ferric bromide	1	1	1	1	1	-	-	1	1	1	1	1	1
Ferric chloride	1	1	1	1	1	-	1	1	1	1	1	1	1
Ferric nitrate	1	1	1	1	1	1	1	1	1	1	1	1	1
Ferric sulfate	1	1	1	1	1	1	1	1	1	1	1	1	1
Ferrous acetate	3	3	2	1/2	1/2	-	-	-	3	3	1	1	1
Ferrous chloride	1	1	1	1	1	1	1	1	1	1	1	1	1
Ferrous hydroxide	2/3	2/3	1/2	1	1	-	-	-	2	2	1	1	1
Ferrous sulfate	1	1	1	1	1	1	1/2	1	1	1	1	1	1
Fluoboric acid	2	2	1	1	1	2	-	1	1	2	1	1	1
Fluorine gas	3	3	3	3	3	3	3	3	3	1/2	1	1	1/2
Fluorobenzene	-	-	-	-	-	-	-	-	-	-	1	1	1
Fluosilicic acid	2	2	1	1	1	-	-	1	1	-	1	1	1
Formaldehyde	2	2	-	1	1	3	3	1	1	2	1	1	1
Formalin	2	2	1	1	1	-	-	1	1	1	1	1	1
Formic acid	2	2	1	1	1	-	-	1	2	3	1	1	1
Freon 12	3	3	3	3	3	2	-	1	3	2	1	2	1
Freon 22	3	3	3	3	3	3	3	1	3	3	1	2	1
Freon SO2	-	-	-	1	-	2	-	-	-	-	1	1	1
Fuel B (ASTM)	3	3	3	3	3	2	1	3	3	1	1	1	1
Fuel C (ASTM)	3	3	3	3	3	3	1	3	3	1	1	1	1
Fuel oil	3	3	3	3	3	2	1	2	3	1	1	1	1
Furan	3	3	3	3	3	3	3	1	3	-	1	1	1
Furfural	3	3	3	-	2	3	3	1	-	3	1	1	1
Furfuryl alcohol	3	3	3	2	2	3	3	1	-	2	1	1	1
Gallic acid	-	-	2	2	2	3	3	1	3	3	1	1	1
Gas, coke	3	3	-	-	-	-	2	-	1	-	-	-	1
Gas, liquified petrol	3	3	3	3	3	3	2	-	-	-	1	1	1
Gasoline	3	3	3	3	3	-	1	2	3	1	1	1	1
Gluconic acid	3	3	-	2	-	-	3	1	2	-	1	1	1
Glucose	1	1	2	1	1	2	2	2	1	-	1	1	1

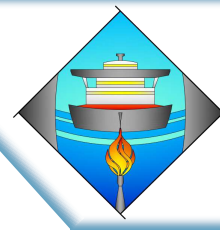


# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Glycerine	1	1	1	1	1	1	1	1	1	1	1	1	1
Glycil alcohol	-	-	-	1	-	-	-	1	-	-	1	1	1
Glycolic acid	-	-	-	2	-	-	-	1	-	-	1	1	1
Glycols	1	1	1	1	1	1	1	1	1	1	1	1	1
Grease	3	3	3	3	3	2	1	-	-	1	1	1	1
Green sulphate liquor	1	1	1	1	1	2	2	2	1	1	1	1	1
Halon 1211	-	-	-	-	-	1	1	-	-	-	-	1	1
Helium	1	1	1	1	1	1	1	1	1	1	1	1	1
Heptanal	3	3	-	1	1	-	-	2	3	-	1	1	1
Heptane	3	3	3	3	3	2	1	1	-	1	1	1	1
Heptane carboxyl.acid	3	3	-	2	-	-	-	1	2	-	1	1	1
Hexaldehyde	3	3	1	1	2	2	-	-	3	3	1	1	1
Hexane	3	3	3	3	3	-	1	2	3	1	1	1	1
Hexanol	1	1	1	1	1	-	1	1	1	2	1	1	1
Hexene	3	3	3	3	3	2	2	1	2	1	1	1	1
Hexyl alcohol	1	1	1	1	1	2	1	1	1	2	1	1	1
Hexyl methyl ketone	3	3	-	2	2	-	3	2	3	3	1	1	1
Hexylamine	2	2	-	-	1	-	2	2	3	-	1	1	1
Hexylene glycol	1	1	1	1	1	-	1	1	1	1	1	1	1
Hydraulic oil	3	3	3	3	3	-	1	1	2	1	1	1	1
Hydrazine	3	3	3	3	2	2	3	3	1	-	1	1	1
Hydrobromic acid	3	1	1	1	1	3	3	1	1	3	1	1	1
Hydrocl. ac.37%(cold)	3	2	1	1	2	-	-	1	2	1	1	1	1
Hydrocl. ac.37%(hot)	3	3	3	2	3	-	-	1	3	2	1	1	1
Hydrochloric acid 15%	3	1	1	1	1	-	-	1	1	1	1	1	1
Hydrocyanic acid	3	3	-	-	2	2	-	3	3	-	1	1	1
Hydrofluoric acid cold	3	3	3	2	1/2	-	-	1	1	-	1	1	1
Hydrofluoric acid hot	3	3	3	3	3	-	-	1	3	-	1	1	1
Hydrofluosilicic acid	3	3	2	1	1/2	3	-	1	1	-	1	1	1
Hydrogen dioxide 10%	3	3	-	2	2	-	-	1	2	1	1	1	1
Hydrogen gas	2	2	-	1	1	1	1	1	2	2	1	1	1
Hydrogen perox. >10%	3	3	-	3	3	-	-	1	3	1	1	1	1
Hydrogen perox. 10%	3	3	-	2	2	-	-	1	2	1	1	1	1
Hydrogen sulfide	3	3	2	1	2	-	3	2	3	3	1	1	1
Iodine	3	3	3	3	3	-	-	1	1	3	1	1	1
Iron acetate	3	3	2	1	2	-	-	-	-	3	1	1	1
Iron salts	1	1	1	1	1	1	1	1	1	1	1	1	1
Isoamyl acetate	3	3	2	1	2	-	-	-	-	3	1	1	1
Isoamyl alcohol	1	1	1	1	1	-	1	1	1	2	1	1	1
Isoamyl bromide	3	3	3	2	-	-	-	-	-	1	1	1	1





# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

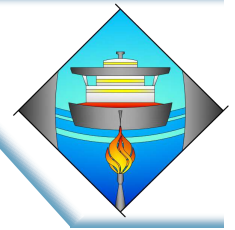
FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Isobutane	3	3	3	3	3	-	1	-	-	1	1	1	1
Isobutyl acetate	3	3	-	2	-	3	-	3	3	3	1	1	1
Isobutyl aldehyde	3	3	2	1	1	-	3	-	2	3	1	1	1
Isobutyl amine	2	2	1	1	1	-	2	1	2	-	1	1	1
Isobutyl bromide	3	3	3	3	3	3	3	3	3	2	1	-	1
Isobutyl carbinol	1	1	1	1	1	-	1	1	1	1	1	1	1
Isobutyl chloride	3	3	3	3	3	3	3	3	3	2	1	-	1
Isobutyl ether	3	3	-	2	2	3	3	2	3	-	1	1	1
Isobutylene	3	3	3	-	3	3	2	-	3	1	1	1	1
Isooctane	3	3	3	3	3	3	1	2	3	1	1	1	1
Isopentane	3	3	3	3	3	3	1	2	3	1	1	1	1
Isopropanol amine	2	2	-	1	1	-	2	1	3	-	1	1	1
Isopropyl acetate	3	3	-	2	2	3	3	-	3	3	1	1	1
Isopropyl alcohol	1	1	1	1	1	1	1	1	1	2	1	1	1
Isopropyl amine	2	2	1	1	1	-	2	1	3	-	1	1	1
Isopropyl benzene	3	3	3	3	3	3	-	-	3	1	1	1	1
Isopropyl ether	3	3	3	3	3	3	3	-	3	3	1	1	1
Isopropyl toluene	3	3	3	3	3	3	3	3	3	1	1	1	1
Jet fuels	3	3	3	3	3	3	1	-	3	1	1	1	1
Kerosene	3	3	3	3	3	2	1	1	3	1	1	1	1
Ketones	3	3	1	1	1	3	3	-	3	3	1	1	1
Lactic acid (cold)	2	2	-	1	1	1	3	-	2	1	1	1	1
Lactic acid (hot)	3	3	-	-	-	-	-	-	-	3	2	2	1/2
Laquers solvents	3	3	3	3	3	3	3	3	3	3	1	1	1
Lard	3	3	-	2	1/2	1	1	1	3	3	1	1	1
Lauryl alcohol	1	1	1	1	1	-	1	1	1	2	1	1	1
Lauryl alcohol	1	1	1	1	1	-	1	1	1	2	1	1	1
Lavender oil	3	3	3	3	3	3	2	-	3	1	1	1	1
Lead acetate	3	2	2	1	2	1	2	1	3	3	1	1	1
Lead sulfate	1	1	1	1	1	1	1	1	1	1	1	1	1
Lime bleach	2	2	1	1	1	2	1	-	2	1	1	1	1
Lime sulfur	3	3	1	1	1	1	3	-	1	1	1	1	1
Linoleic acid	3	3	3	-	-	-	2	-	-	2	1	1	1
Linseed oil	3	3	-	2	2	-	1	1	-	1	1	1	1
Liquid Petroleum Gas	3	3	3	3	3	-	1	2	-	1	1	1	1
Lubricating oils	3	3	3	3	3	2	1	2	-	1	1	1	1
Lye solutions	2	2	1	1	1	-	-	1	1	2	1	1	1
M.E.K.	3	3	2	1	2	-	-	3	3	3	1	1	1
Magnesium acetate	3	3	-	2	2	-	-	1	-	-	1	1	1
Magnesium chloride	1	1	1	1	1	1	1	1	1	1	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Magnesium hydrate	2	2	-	1	1	-	2	1	2	-	1	1	1
Magnesium hydroxide	2	2	1	1	1	2	2	1	2	2	1	1	1
Magnesium sulfate	1	1	1	1	1	1	1	1	1	-	1	1	1
Maleic acid	3	3	3	2	-	3	3	3	3	-	1	1	1
Maleic anhydride	3	3	3	2	3	3	3	3	3	3	1	1	1
Malic acid	3	2	-	2	-	-	-	2	2	1	1	1	1
Manganese sulphate	2	2	1	1	1	-	-	1	1	1	1	1	1
Manganese sulphite	2	2	1	1	1	-	-	1	1	1	1	1	1
Mercury	1	1	1	1	1	1	-	1	1	1	1	1	1
Mesityl oxide	3	3	2	2	-	-	-	2	-	-	1	1	1
Methallyl alcohol	1	1	1	1	1	-	1	1	1	3	1	1	1
Methanecarboxylic acid	3	3	3	-	-	2	-	1	-	-	1	1	1
Methanoic acid	3	3	-	2	-	-	-	1	-	-	1	1	1
Methanol	1	1	1	1	1	1	1	1	1	2	1	1	1
Methoxy ethanol	3	3	-	2	-	-	-	1	-	-	1	1	1
Methyl 1,2-pentanediol	3	3	-	-	-	-	-	1	-	-	1	1	1
Methyl acetate	3	3	2	1	2	-	-	1	3	3	1	1	1
Methyl acetone	3	3	2	1	2	-	-	1	3	3	1	1	1
Methyl alcohol	1	1	1	1	1	1	1	1	1	2	1	1	1
Methyl allyl acetate	3	3	-	2	-	-	-	-	-	3	1	1	1
Methyl allyl alcohol	-	-	-	2	-	-	-	1	-	-	1	1	1
Methyl allyl chloride	3	3	-	2	-	-	-	3	-	3	1	2	1
Methyl amyl acetate	3	3	-	2	-	-	-	3	-	3	1	2	1
Methyl amyl carbinol	1	1	1	1	1	-	-	1	1	3	1	1	1
Methyl benzene	3	3	3	3	3	3	3	3	3	1	2	2	1
Methyl bromide	3	3	3	3	3	3	3	3	3	1	2	2	1
Methyl butane	3	3	3	3	3	-	2	1	-	-	1	-	1
Methyl butanol	1	1	1	1	1	-	1	1	1	-	1	1	1
Methyl butyl ketone	3	3	2	1	2	-	-	-	-	3	1	1	1
Methyl carbitol	3	3	-	2	-	-	-	1	-	3	1	1	1
Methyl cellosolve	3	3	2	1	2	-	3	1	3	3	1	1	1
Methyl chloride	3	3	3	3	3	3	2/3	3	3	1/2	1/2	1/2	1/2
Methyl cyclohexane	3	3	3	3	3	3	2/3	3	3	1/2	1/2	1/2	1
Methyl ethyl ketone	3	3	2	1	2	-	-	3	3	3	1	1	1
Methyl hexanol	1	1	1	1	1	1	1	1	1	2	1	1	1
Methyl hexanone	3	3	2	1	1/2	3	3	3	3	3	1	1	1
Methyl isobut carbinol	2	2	1	1	1	-	-	1	3	3	1	1	1
Methyl isobutyl cheton	3	3	3	2	2	3	3	-	-	3	1	1	1
Methyl methacrylate	3	3	3	3	3	-	-	-	3	3	1	1	1
Methyl n amyl chetone	3	3	-	1/2	1/2	-	-	-	-	3	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

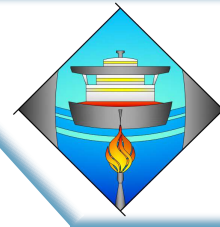
FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Methyl propyl ether	3	3	-	2	2	-	-	-	-	3	1	1	1
Methyl salicylate	3	3	-	1/2	1/2	-	-	-	-	3	1	1	1
Methyl ter butyl ether	3	3	-	2	2	-	-	-	-	3	1	1	1
Methylene bromide	3	3	3	3	3	3	3	3	3	-	2	2	1/2
Methylene bromide	3	3	3	3	3	3	3	3	3	1/2	1/2	1/2	1
Methylene chloride	3	3	3	3	3	3	3	3	3	1/2	1/2	1/2	1/2
Methylene chloride	3	3	3	3	3	3	3	3	3	-	2	2	1/2
Mineral spirits	3	3	3	-	-	2	1	-	-	-	1	1	1
Molten sulphur	2	2	2	1/2	2	-	3	1	2	-	-	-	1
Monobutyl ether	3	3	3	2	2	-	-	-	-	3	1	1	1
Monochloroacetic acid	3	2	-	2	-	-	3	1	3	3	1	1	1
Monochlorobenzene	3	3	3	3	3	3	3	3	3	1	1/2	1/2	1
Monochlorodifluormet	3	3	3	-	2	3	-	-	-	-	1/2	1/2	1
Monoethanol amine	2	1	1	1	1	-	2	-	2	3	1	1	1
Monoethyl amine	-	-	2	1/2	2	-	-	1	2	-	1	1	1
MTBE (ter butyl metil Ether)	3	3	-	2	-	-	-	3	-	3	1	-	1
Muriatic acid	-	1	2	2	2	-	-	1	-	1	1	1	1
Naphta	3	3	3	3	3	3	1	2	-	1	1	1	1
Naphtalene	3	3	3	3	3	3	3	2	3	2	1	1	1
Naphtenic acid	3	3	3	3	3	3	2	2	3	1	1	1	1
Natural gas	3	3	3	3	3	3	1/2	-	2	1	1	1	1
Neohexane	3	3	3	3	3	3	1/2	2	-	1	1	1	1
Nickel acetate	2	2	-	1	2	-	2	-	-	3	1	1	1
Nickel chloride	1	1	1	1	1	2	1	1	1	1	1	1	1
Nickel nitrate	1	1	1	1	1	2	1	1	1	1	1	1	1
Nickel sulphate	1	1	1	1	1	1	1	1	1	1	1	1	1
Nitric acid ? fuming	3	3	3	3	3	3	-	-	3	2/3	3	3	1/2
Nitric acid 10%	3	3	2	1	1	-	-	-	1	1	1	1	1
Nitric acid 20%	3	3	3	1	2	-	-	-	2	1	1	1	1
Nitric acid 30%	3	3	3	2	2	-	-	-	3	1	1	1	1
Nitric acid 40%	3	3	3	2	3	3	-	-	3	1	1	1	1
Nitric acid 40-60%	3	3	3	3	3	3	-	-	3	2	2	2	1
Nitrobenzene	3	3	3	3	3	3	-	-	3	2	1	1	1
Nitrocellulose	-	-	-	-	-	-	-	-	-	-	1	1	1
Nitrogen gas	1	1	1	1	1	1	1	1	1	1	1	1	1
Nitromethane	3	2	2	1	1	-	-	-	3	-	1	1	1
Nitropropane	-	-	-	-	-	-	-	-	-	-	1	1	1
Nitrous oxide gas	1	1	1	1	1	-	-	1	1	-	1	1	1
Nonenes	3	3	3	3	3	-	1/2	-	-	1	1	1	1
Octadecanoic acid	3	3	3	3	3	-	1/2	2	-	-	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Octane	3	3	3	3	3	-	1	-	-	1	1	1	1
Octanol	2	2	2	1	2	-	2	1	2	2	1	1	1
Octyl acetate	3	3	2	2	2	-	-	3	3	3	1	1	1
Octyl alcohol	2	2	2	1	2	-	-	1	-	2	1	1	1
Octyl aldehyde	3	3	-	1	2	-	-	1	3	3	1	1	1
Octyl amine	2	2	2	1	2	-	-	2	3	3	1	1	1
Octyl carbinol	1	1	1	1	1	-	1	1	1	2	1	1	1
Octylene glycol	1	1	1	1	1	-	1	1	1	-	1	1	1
Oil ? petroleum	3	3	3	3	3	2/3	1	-	2/3	1	1	1	1
Oleic acid	3	3	-	2	-	-	2	1	3	2	1	1	1
Oleum	3	3	3	3	3	3	3	3	3	2	3	3	1/2
Olive oil	3	3	-	2	1	1	1	2	3	1	1	1	1
Orthodichlorobenzene	3	3	3	3	3	3	3	3	3	1	1/2	1/2	1
Orthodichlorobenzol	3	3	3	3	3	3	3	3	3	1/2	1/2	1/2	1
Orthoxylene	3	3	3	3	3	3	3	3	3	1	1	1	1
Oxalic acid	3	3	1	1	1	3	3	1	3	3	1	1	1
Oxygen	2	2	1	1	1	-	2	1	1	1	1	1	1
Ozone	3	3	1	1	1/2	2	3	1	2	3	1	1	1
Paint	3	3	2	2	-	-	2	-	-	2	1	1	1
Palmitic acid	3	3	-	2	2	-	1	1	3	3	1	1	1
Papermakers alum	1	1	1	1	1	1	1	1	1	1	1	1	1
Paraffin	3	3	3	3	3	2	1	1	3	1	1	1	1
Paraldehyde	3	3	-	1/2	1/2	3	3	-	-	3	1	1	1
Paraxylene	3	3	3	3	3	3	3	3	3	1	1/2	1/2	1
Pelargonic acid	3	3	-	1	1	-	2	1	3	-	1	1	1
Pentachloroethene	3	3	3	3	3	3	3	3	3	1	1	1	1
Pentadione	3	3	-	2	-	-	-	2	3	3	1	1	1
Pentane	3	3	3	3	3	2	1	1	3	1	1	1	1
Pentanone	3	3	-	2	-	-	-	-	3	3	1	1	1
Pentanol	1	1	-	1	1	-	-	-	1	1	1	1	1
Perchloric acid	3	3	-	2	-	3	3	-	2	1	1	1	1
Perchloroethylene	3	3	3	3	3	3	3	3	3	1	1	1	1
Petroleum crude	3	3	3	3	3	3	1	1	3	1	1	1	1
Petroleum ether	3	3	3	3	3	3	1/2	1/2	3	1	1	1	1
Petroleum oils	3	3	3	3	3	-	1	-	3	1	1	1	1
Phenol	3	3	3	-	2	-	3	1	-	1	1	1	1
Phenolsulphonic acid	3	3	3	2/3	2/3	-	-	1/2	3	3	1	1	1
Phenyl chloride	3	3	3	3	3	3	3	3	3	1	1	1	1
Phenylamine	-	-	-	2/3	-	-	-	1/2	-	-	1/2	1/2	1
Phenylhydrazine	2	1/2	2	2	2	3	3	-	3	1	1/2	1/2	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

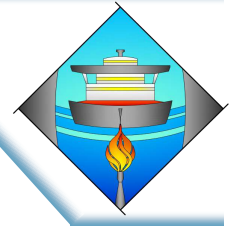
FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Phosphoric acid 10%	1	1	1	1	1	2	-	1	1	1	1	1	1
Phosphoric acid 10-85%	3	2	1	1	1	2	3	1	1	1	1	1	1
Picric acid (alcoholic)	2	2	2	-	1/2	-	-	2	1	3	1	1	1
Pine oil	3	3	3	3	3	3	3	1/2	3	1	1	1	1
Pinene	3	3	3	3	3	3	2	1	3	1	1	1	1
Polyethylene glycol	1	1	1	1	1	-	1	1	1	1	1	1	1
Polyol ester	3	3	3	3	-	-	1/2	-	-	1/2	1	1	1
Polypropylene glycol	1	1	1	1	1	-	1	1	1	1	1	1	1
Potassium acetate	3	3	1	1	2	2	2	1	3	3	1	1	1
Potassium bisulfate	1	1	1	1	1	1	-	1	1	-	1	1	1
Potassium busulfite	1	1	1	1	1	-	-	1	1	-	1	1	1
Potassium carbonate	1	1	1	1	1	1	1	1	1	-	1	1	1
Potassium chloride	1	1	1	1	1	1	1	1	1	-	1	1	1
Potassium chromate	-	-	-	1	1	-	-	1	2	1	1	1	1
Potassium cyanide	1	1	1	1	1	-	-	1	1	-	1	1	1
Potassium dichromate	-	-	-	1	1	-	-	1	2	1	1	1	1
Potassium hydroxide	2	2	1	1	1	3	3	1	2	3	1	1	1
Potassium nitrate	1	1	1	1	1	1	1	1	1	1	1	1	1
Potassium pmanganate	-	-	-	-	-	-	-	2	1	-	1	1	1
Potassium silicate	1	1	1	1	1	-	-	1	1	1	1	1	1
Propane	3	3	3	3	3	3	1	1	2	1	1	1	1
Propanediol	1	1	1	1	1	-	-	1	1	1	1	1	1
Propanol	1	1	1	1	1	-	-	1	1	2	1	1	1
Propanolamine	-	-	-	-	-	-	-	1	-	3	1	1	1
Propanone	-	-	-	1	2	-	-	1	-	3	1	1	1
Propenenitrile	-	-	-	-	-	-	-	1	-	-	-	-	1
Propionic acid	-	-	2	1	2	-	-	-	-	-	1	1	1
Propyl acetate	3	3	2	1/2	2	-	-	1/2	-	3	1	1	1
Propyl alcohol	1	1	1	1	1	-	2	1	1	-	1	1	1
Propyl aldehyde	3	3	2	1	2	-	-	1	-	3	1	1	1
Propyl benzene	3	3	3	3	3	-	2/3	-	-	1	1	1	1
Propyl chloride	3	3	3	3	3	3	3	-	-	2	1	1/2	1
Propyl ether	-	-	-	2	-	-	-	1	-	-	1	1/2	1
Propylene	3	3	3	3	3	3	3	1	-	1	1	-	1
Propylene dichloride	3	3	3	3	3	3	3	3	-	2	1	1/2	1
Propylene glycol	1	1	1	1	1	-	-	1	1	1	1	1	1
Red oil	3	3	3	3	3	2	1	1	2	1	1	1	1
Resorcinol	-	-	-	-	-	-	-	-	-	2	1	1/2	1
Richfield A, 100%	-	-	-	-	-	-	-	-	-	-	1	1	1
Richfield D, 33%	-	-	-	-	-	-	-	-	-	-	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

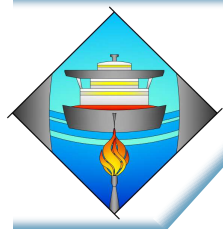
FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Sea water	1	1	1	1	1	1	1	1	1	1	1	1	1
Sewage	2	2	3	3	2	1	1	1	1	-	1	1	1
Silicate esters	-	-	-	-	-	1	2	1	-	-	1	1	1
Silicate of soda	1	1	1	1	1	-	-	1	1	-	1	1	1
Silicone grease	1	1	1	1	1	1	1	1	1	-	1	1	1
Silicone oil	1	1	1	1	1	1	1	1	1	-	1	1	1
Silver nitrate	1	1	1	1	1	1	2	1	1	1	1	1	1
Skydrol 500B	-	-	-	1	2	3	-	2	3	3	1	1	1
Soap solutions	2	2	2	1	1	2	1	1	1	1	1	1	1
Soda ash	1	1	1	1	1	1	1	1	1	1	1	1	1
Soda lime	2	2	2	1	1	-	-	1	2	2	1	1	1
Soda, caustic	2	2	2	1	1	-	-	1	2	2	1	1	1
Sodium acetate	3	3	3	1	2	-	-	1	3	3	1	1	1
Sodium aluminate	1	1	1	1	1	1	-	1	1	-	1	1	1
Sodium bicarbonate	1	1	1	1	1	1	1	1	1	1	1	1	1
Sodium bisulphate	2	2	2	1	1	-	1	1	1	-	1	1	1
Sodium bisulphite	2	2	2	1	1	-	1	1	1	-	1	1	1
Sodium borate	1	1	1	1	1	1	1	1	1	1	1	1	1
Sodium chloride	1	1	1	1	1	1	1	1	1	1	1	1	1
Sodium cyanide	3	3	3	1	1	3	3	1	1	-	1	1	1
Sodium dichromate	3	3	3	1	1	-	-	1	2	3	1	1	1
Sodium Hypochlorite	3	3	3	2	2	-	-	1	2	2	1	1	1
Sodium metaphosphate	2	2	2	1	1	2	2	1	2	-	1	1	1
Sodium nitrate	1	1	1	1	1	-	-	1	1	1	1	1	1
Sodium perborate	2	2	2	1	1	2	2	1	1	-	1	1	1
Sodium peroxide	2	2	2	1	1	-	-	-	2	-	1	1	1
Sodium Silicate	1	1	1	1	1	1	-	1	1	-	1	1	1
Sodium Thiosulfate	1	1	1	1	1	1	-	1	1	1	1	1	1
Soybean oil	3	3	3	2	1	2	1	-	2	1	1	1	1
Stannic chloride	1	1	1	1	1	-	-	1	1	-	1	1	1
Steam, max 176°C	3	3	1	1	1/2	3	3	-	-	3	3	3	1
Stearic acid	3	3	2	1	2	2	2	1	3	3	1	1	1
Stoddarts solvent	3	3	3	3	3	-	1	1	3	1	1	1	1
Styrene	3	3	3	3	3	3	3	3	3	2	2	2	1
Sulphamic acid	2	2	1	1	1	2	2	1	2	3	1	1	1
Sulphonic acid	3	3	3	3	3	3	3	2	2	-	1	1	1
Sulphur	3	3	3	2/3	2/3	-	-	2/3	2/3	2	1	1	1
Sulphur dioxide	3	3	2	2	-	-	-	-	2	-	1	1	1
Sulphur trioxide	3	3	3	3	-	-	-	-	-	-	3	3	1
Sulphuric acid 25%	3	2	1	1	1	2	-	1	1	1	1	1	1



# Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Sulphuric acid 50%	3	3	1	1	1	-	-	1	1	1	1	1	1
Sulphuric acid 75%	3	3	2	1	2	-	-	1	1	1	1	1	1
Sulphuric acid 96%	3	3	3	2	3	-	-	2	2	-	1/2	1	1
Sulphuric acid 98%	3	3	3	3	3	-	-	3	3	-	2	2	1
Sulphuric acid –fuming	3	3	3	3	3	3	3	3	3	3	3	3	1
Sulphurous acid 10%	2	2	1	1	1	-	-	1	1	-	1	1	1
Sulphurous acid 85%	3	3	1	1	1	-	-	1	1	-	1	1	1
Sulphydic acid (H2S)	3	3	2	1	1	-	3	1	1	-	1	1	1
Tall oil	3	3	3	3	3	2	1	-	3	1	1	1	1
Tallow	3	3	3	3	3	-	1	-	3	-	1	1	1
Tannic acid	2	2	1	1	1	-	-	1	1	-	1	1	1
Tar	3	3	3	3	3	2/3	2	-	-	1	3	2	1
Tartaric acid	3	3	2	1	1	2	2	1	1	-	1	1	1
Tertiary butyl alcohol	2	2	1	1	1	-	1	1	1	1	1	1	1
Tertiary butyl mercapt	3	3	3	3	3	-	-	-	-	1	-	-	1
Tetrachlorobenzene	3	3	3	3	3	3	3	3	3	1/2	2	1/2	1
Tetrachloroetane	3	3	3	3	3	3	3	3	3	1	2	2	1
Tetrachloroethylene	3	3	3	3	3	3	3	3	3	1	1/2	1	1
Tetrachloromethane	3	3	3	3	3	3	3	3	3	1	1	1	1
Tetrachloronaphtalene	3	3	3	3	3	3	3	3	3	1/2	1	1	1
Tetrahydrofuran	3	3	3	3	3	3	3	3	3	-	1/2	1	1
Tin chloride	2	2	2	1	1	-	2	-	1	-	1	1	1
Toluene	3	3	3	3	3	-	3	-	-	1	1/2	1/2	1
Toluidine	3	3	3	3	3	-	3	-	-	2	2	1	1
Toluol	3	3	3	3	3	-	3	-	3	1	1	1	1
Transformer oil	3	3	3	3	3	2	1	1	-	1	1	1	1
Tributyl amine	2	2	-	2	2	2	2	1	3	-	1	1	1
Trichloroacetic acid	3	3	2	1	2	-	-	-	3	3	1	1	1
Trichlorobenzene	3	3	3	3	3	3	3	3	3	2	2	2	1
Trichloroethane	3	3	3	3	3	3	3	3	3	1/2	1/2	1/2	1
Trichloroethylene	3	3	3	3	3	3	3	3	3	1/2	2	2	1
Trichloropropane	3	3	3	3	3	3	3	3	3	2	1	1	1
Tricresyl phosphate	3	3	-	2	2	-	-	1/2	3	3	1	1	1
Triethanolamine	3	2	2	1/2	1/2	2	3	1	2	3	1	1	1
Triethylamine	3	3	2	2	2	-	-	1	-	3	1	1	1
Triethylene glycol	1	1	1	1	1	-	-	1	1	1	1	1	1
Trimethylamine	3	3	-	-	-	-	-	1	-	3	1	1	1
Trinitrotoluene	3	3	3	3	3	3	3	-	-	2	2	1/2	1
Trioctyl phosphate	3	3	-	2	2	-	-	1	-	-	1	1	1
Tung oil	3	3	3	3	3	2	1	1/2	2	1	1	1	1



## Rubber Chemical Resistance

1=EXCELLENT CHEMICAL RESISTANCE 2=FAIR CHEMICAL RESISTANCE 3=POOR CHEMICAL RESISTANCE

FLUID OR CONVEYED MATERIAL	SBR	NR	EPDM	EPR	IIR	CR	NBR	CPE	Hypalon	Viton	XLPE	UHMWPE	Teflon
Turpentine	3	3	3	3	3	3	3	2	-	1	1	1	1
Urea	2	2	2	1	2	2	2	1	1	-	1	1	1
Vegetable oils	3	3	3	2/3	1	-	1	1	2	1	1	1	1
Vinegar	2	2	1	1	1	-	3	2	2	3	1	1	1
Vinyl acetate	3	3	-	2	2	-	-	1	3	3	1	1	1
Vinyl benzene	3	3	3	3	3	3	3	3	3	2	1/2	1	1
Vinyl chloride	3	3	3	3	3	3	3	3	3	1	1	1	1
Vinyl cyanide	3	3	3	3	3	3	3	2	3	-	1/2	1/2	1
Vinyl ether	3	3	3	-	2	-	-	-	-	-	1	1	1
Vinyl Trichloride	3	3	3	3	3	-	-	2	-	-	1/2	1/2	1
Water	1	1	1	1	1	2	1	1	1	1	1	1	1
White oil	3	3	3	3	3	1/2	1	-	-	-	1	1	1
Wines	1	1	-	-	1	-	1	-	-	-	1	1	1
Wood oil	3	3	3	3	3	2	1	1/2	-	1	1	1	1
Xylene	3	3	3	3	3	3	3	-	-	1	2	2	1
Zinc acetate	1	1	1	1	1	1	1	1	1	-	1	1	1
Zinc chloride	1	1	1	1	1	1	1	1	1	-	1	1	1
Zinc chromate	-	-	-	1	-	-	-	-	-	-	1	1	1
Zinc sulphate	1	1	1	1	1	1	1	1	1	1	1	1	1





