FLUID/SEAL MATERIAL COMPATIBILITY

RATINGS:
- **1 — MINOR EFFECT**
- **2 — MODERATE EFFECT**
- **3 — SEVERE EFFECT, SOME STATIC APPLICATIONS ONLY**
- **4 — NOT RECOMMENDED**
- **— INSUFFICIENT DATA**

		DYNAMIC AND STATIC									STATIC ONLY			
FLUID	**NATIONAL RECOMMENDED COMPOUND**	**NITRILE (BUNA N)**	**ETHYLENE-PROPYLENE**	**NEOPRENE**	**FLUOROCARBON**	**STYRENE-BUTASDIENE (SBR)**	**POLYACRYLATE**	**POLYURETHANE**	**BUTYL**	**EPICHLOROHYDRIN**	**SILICONE**	**FLUOROSILICONE**	**POLYSULFIDE**	**CHLOROSULFONATED POLYETHYLENE**
Acetaldehyde	E50-70	4	1	3	4	3	4	4	1	—	2	4	3	3
Acetamide	B46-70	1	1	2	2	4	4	4	1	—	2	1	4	2
Acetic Acid, Glacial	E50-70	3	1	4	3	2	4	4	2	4	2	4	2	3
Acetic Acid, 3	E50-70	3	2	2	4	2	4	4	2	4	3	4	2	1
Acetic Anhydride	N11-70	4	1	3	4	3	4	4	1	4	3	4	3	2
Acetone	E50-70	4	1	4	4	4	4	4	1	4	4	4	4	4
Acetophenone	E50-70	4	4	4	1	4	4	4	4	—	3	1	4	4
Acetyl Chloride	V14-75	1	1	2	1	2	4	4	1	—	2		3	2
Acetylene	E50-70	1	1	1	—	1	—	—	1	—	—	1	—	—
Adipic Acid	B46-70	4	4	4	2	4	4	4	4	—	4	2	3	4
Alkazene (Dibromoethyl benzene)	V14-75	4	4	4	2	4	4	4	4	—	4	2	3	4
Alum-NH,-Cr-K (aq)	B46-70	1	1	1	4	1	4	—	1	—	1	4	4	1
Aluminum Acetate (aq)	E50-70	2	1	2	4	2	4	4	1	2	4	4	4	1
Aluminum Chloride (aq)	B46-70	1	1	1	1	1	1	3	1	1	2	1	4	1
Aluminum Fluoride (aq)	B46-70	1	1	1	1	1	—	3	1	1	2	1	4	1
Aluminum Nitrate (aq)	B46-70	1	1	1	1	1	—	3	1	1	2	—	2	1

Aluminum Phosphate (aq)	B46-70	1	1	1	1	1	—	—	1	1	1	—	—	1
Aluminum Sulfate (aq)	B46-70	1	1	1	1	1	4	4	1	—	1	1	4	1
Ammonia, Anhydrous	E50-70	2	1	1	4	4	4	4	1	—	3	4	—	2
Ammonia Gas (cold)	N11-70	1	1	1	4	1	4	3	1	—	1	4	1	1
Ammonia Gas (hot)	N11-70	4	2	2	4	4	4	4	2	—	1	4	4	2
Ammonium Carbonate (aq)	E50-70	4	2	1	—	1	4	4	1	2	—	—	—	—
Ammonium Chloride (aq)	B46-70	1	1	1	1	1	—	1	1	1	—	—	1	1
Ammonium Hydroxide (conc.)	E50-70	4	1	1	2	4	4	4	1	2	1	2	1	1
Ammonium Nitrate (aq)	B46-70	1	1	1	—	2	2	4	1	1	—	—	—	1
Ammonium Nitrite (aq)	B46-70	1	1	1	—	1	—	—	1	—	2	—	—	1
Ammonium Persulfate (aq)	E50-70	4	1	1	—	4	4	4	1	—	—	—	—	1
Ammonium Phosphate (aq)	B46-70	1	1	1	—	1	—	—	1	—	1	—	1	1
Ammonium Sulfate (aq)	B46-70	1	1	1	4	1	4	1	1	—	—	—	4	1

		DYNAMIC AND STATIC									STATIC ONLY			
FLUID	**NATIONAL RECOMMENDED COMPOUND**	**NITRILE (BUNA N)**	**ETHYLENE-PROPYLENE**	**NEOPRENE**	**FLUOROCARBON**	**STYRENE-BUTASDIENE (SBR)**	**POLYACRYLATE**	**POLYURETHANE**	**BUTYL**	**EPICHLOROHYDRIN**	**SILICONE**	**FLUOROSILICONE**	**POLYSULFIDE**	**CHLOROSULFONATED POLYETHYLENE**
Amyl Alcohol	E50-70	2	1	2	2	2	4	4	1	1	4	1	2	1
Amyl Borate	B46-70	1	4	1	1	4	—	—	4	—	—	—	1	1
Amyl Chloronaphthalene	V14-75	4	4	4	1	4	4	4	4	—	4	2	3	4
Amyl Naphthalene	V14-75	4	4	4	1	4	2	4	4	—	4	1	3	4
ASTM Fuel A	B46-70	1	4	2	1	4	2	2	4	1	4	1	1	3
ASTM Fuel B	B46-70	1	4	3	1	4	—	3	4	1	4	1	1	3
ASTM Fuel C	C9-70	1	4	3	1	4	—	3	4	1	4	1	1	3
ASTM Fuel D	C9-70	1	4	3	1	4	—	3	4	1	4	1	1	3
ASTM Oil One	B46-70	1	4	1	1	4	1	1	4	1	3	1	1	1
ASTM Oil Two	B46-70	1	4	2	1	4	1	2	4	1	3	1	1	2
ASTM Oil Three	B46-70	1	4	2	1	4	1	2	4	1	3	1	1	2
Benzene	V14-75	4	4	4	1	4	4	3	4	4	4	3	3	4
Benzene Sulfonic Acid	V14-75	4	3	2	1	4	4	4	4	—	4	2	4	1

Benzine (Ligroin) (Nitrobenzine)	B46-70	1	4	2	1	4	1	2	4	—	4	1	1	3
Benzoic Acid	V14-75	3	3	4	1	4	3	4	4	—	3	2	2	4
Benzyl Chloride	V14-75	4	4	4	1	4	3	—	4	—	—	2	4	4
Benzyl Alcohol	V14-75	4	1	3	1	4	4	4	1	—	2	2	4	2
Benzyl Benzoate	V14-75	4	2	4	1	4	4	—	2	—	—	1	4	4
Benzyl Chloride	V14-75	4	4	4	1	4	4	4	4	—	4	2	4	4
Boric Acid	B46-70	1	1	1	1	1	4	1	1	1	1	1	1	1
Brine	B46-70	1	1	1	1	1	4	2	1	—	1	1	4	1
Butane	B46-70	1	4	1	1	4	1	1	4	1	4	1	1	2
Butyl Alcohol	B46-70	1	2	1	1	1	4	4	2	—	2	2	2	1
Calcium Chloride (aq)	B46-70	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Hydroxide (ac)	B46-70	1	1	1	1	1	4	1	1	1	1	1	4	1
Calcium Hypochlorite (aq)	E50-70	2	1	3	1	3	4	4	1	2	2	2	4	1
Calcium Nitrate (aq)	B46-70	1	1	1	1	1	1	1	1	1	2	1	1	1
Calcium Sulfide (aq)	B46-70	1	1	1	1	2	4	1	1	2	2	1	4	1
Carbolic Acid (Phenol)	V14-75	4	2	3	1	—	4	3	2	—	4	1	4	4
Carbon Dioxide	B46-70	1	2	2	1	2	—	1	2	1	2	1	2	2
Carbonic Acid	E50-70	2	1	1	1	2	1	1	1	1	1	1	1	1
Carbon Monoxide	B46-70	1	1	2	1	2	—	1	1	1	1	2	1	2
Carbon Tetrachloride	V14-75	3	4	4	1	4	4	4	4	4	4	3	3	4
Chlorine (dry)	V14-75	4	4	3	1	4	4	4	4	2	4	1	4	2
Chlorine (wet)	V14-75	4	3	3	1	4	4	4	3	2	4	2	3	3
Chlorine Dioxide	V14-75	4	3	4	1	4	4	4	3	—	—	2	4	3
Chlorine Trifluoride	V14-75	4	4	4	4	4	4	4	4	4	4	3	4	4
Chromic Acid	V14-75	4	3	3	1	4	4	4	3	—	3	3	4	2
Detergent Solutions	E50-70	1	1	2	1	2	4	4	1	1	1	1	—	2
		DYNAMIC AND STATIC									**STATIC ONLY**			

FLUID	NATIONAL RECOMMENDED COMPOUND	NITRILE (BUNA N)	ETHYLENE-PROPYLENE	NEOPRENE	FLUOROCARBON	STYRENE-BUTASDIENE (SBR)	POLYACRYLATE	POLYURETHANE	BUTYL	EPICHLOROHYDRIN	SILICONE	FLUOROSILICONE	POLYSULFIDE	CHLOROSULFONATED POLYETHYLENE
Diacetone	E50-70	4	1	4	4	4	4	4	1	—	4	4	2	4
Diacetone Alcohol	K4-60	4	1	2	4	4	4	4	1	4	2	4	2	2
Dibenzyl Ether	V14-75	4	2	3	4	4	—	2	2	4	—	—	2	4
Diphenyl (Phenylbenzene)	B46-70	4	4	4	1	4	4	4	4	—	4	2	2	4
Ethane	E50-70	1	4	2	1	4	1	3	4	—	4	2	1	2
Ethyl Acetate	E50-70	4	2	3	4	4	4	4	2	4	2	4	3	4
Ethyl Acetoacetate	E50-70	4	2	3	4	3	4	4	2	—	2	4	2	4
Ethyl Acrylate	E50-70	4	2	4	4	4	4	4	2	—	2	4	2	4
Ethyl Alcohol	E50-70	1	1	1	3	1	4	4	1	2	1	1	1	1
Ethyl Benzene	V14-75	4	4	4	1	4	4	4	4	4	4	1	4	4
Ethyl Benzoate	V14-75	4	1	4	1	1	4	4	1	—	4	1	2	4
Ethyl Cellosolve	E50-70	4	2	4	4	4	4	4	4	—	4	4	2	4
Ethyl Cellulose	B46-70	2	2	2	4	2	4	2	2	—	3	4	4	2
Ethyl Chloride	B46-70	1	3	4	1	4	4	2	4	2	4	1	4	4
Ethyl Chlorocarbonate	V14-75	4	2	4	1	4	4	4	3	—	4	2	4	4
Ethyl Chloroformate	E50-70	4	2	4	4	4	4	4	3	—	4	4	4	4
Ethyl Ether	K4-60	3	3	3	4	4	4	3	3	2	4	3	2	4
Ethyl Formate	V14-75	4	2	2	1	4	—	—	2	4	—	1	4	2
Ethyl Mercaptan	V14-75	4	3	3	2	4	—	—	4	4	3	—	4	2
Ethyl Oxalate	V14-75	4	1	3	1	1	4	1	1	4	4	2	1	4
Ethyl Pentachlorobenzene	V14-75	4	4	4	1	4	4	4	4	3	4	2	3	4
Ethyl Silicate	E50-70	1	1	1	1	2	—	—	1	1	—	1	2	2
Ethylene	B46-70	1	2	3	1	3	—	—	2	—	—	1	—	—
Ethylene Chloride	V14-75	4	3	4	2	4	4	4	3	—	4	3	2	4
Ethylene Chlorohydrin	V14-75	4	2	2	1	2	4	4	2	—	3	2	2	2
Ethylene Diamine	E50-70	1	1	1	4	2	4	4	1	1	1	4	4	2
Ethylene Dichloride	V14-75	4	3	4	1	4	4	4	3	4	4	3	4	4

Ethylene Glycol	E50-70	1	1	1	1	1	3	4	1	1	1	1	3	1
Ethylene Oxide		4	3	4	4	4	4	4	3	—	4	4	—	4
Ethylene Trichloride	V14-75	4	3	4	1	4	4	4	3	—	4	3	4	4
Fluorine (liquid)		4	4	4	—	4	4	4	4	—	4	—	4	—
Freon 11	B46-70	2	4	3	1	4	—	4	4	—	4	2	1	1
Freon 12	N11-70	1	2	1	2	1	1	1	2	1	4	3	1	1
Freon 13		1	1	1	1	1	—	—	1	1	4	4	1	1
Freon 21	N11-70	4	4	4	4	4	—	—	4	2	4	—	4	4
Freon 22		4	1	1	4	1	2	4	1	1	4	4	4	1
Freon 31	N11-70	4	1	2	4	2	—	—	1	—	—	—	3	2
Freon 32	N11-70	1	1	1	4	1	—	—	1	—	—	—	1	1
Freon 112	V14-75	2	4	3	1	3	—	—	4	—	4	—	1	2
Freon 113	N11-70	1	3	1	2	2	—	2	4	1	4	4	1	1

FLUID	NATIONAL RECOMMENDED COMPOUND	NITRILE (BUNA N)	ETHYLENE-PROPYLENE	NEOPRENE	FLUOROCARBON	STYRENE-BUTASDIENE (SBR)	POLYACRYLATE	POLYURETHANE	BUTYL	EPICHLOROHYDRIN	SILICONE	FLUOROSILICONE	POLYSULFIDE	CHLOROSULFONATED POLYETHYLENE
		DYNAMIC AND STATIC									STATIC ONLY			
Freon 114	N11-70	1	1	1	2	1	—	1	1	1	4	2	1	1
Freon 115	B46-70	1	1	1	2	1	—	—	1	—	—	—	1	1
Freon 142b	N11-70	1	2	1	4	2	—	—	1	—	—	—	1	1
Freon 152a	N11-70	1	1	1	4	1	—	—	1	—	—	—	1	3
Freon 218	N11-70	1	1	1	1	1	—	—		—	—	—		
Freon C316	N11-70	1	1	1		1	—	—	1	—	—	—	1	1
Freon C318	N11-70	1	1	1	2	1	—	—	1	—	—	—	1	1
Freon 13B1	N11-70	1	1	1	1	1	—	1	1	—	4	—	1	1
Freon 114B2	N11-70	2	4	2	2	3	—	—	4	—	4	—	2	1
Freon 502	N11-70	2	1	1	2	1	—	—	1	—	—	—	—	—
Freon TF	N11-70	1	4	1	2	3	—	1	4	1	4	—	1	1
Freon T-WD602	V14-75	2	2	2	1	3	—	1	2	—	4	—	1	2
Freon TMC	V14-75	2	3	3	1	4	—	2	3	—	3	—	1	2

Freon T-P35	B46-70	1	1	1	1	1	—	1	1	—	1	—	1	1
Freon TA	B46-70	1	2	2	3	3	—	1	2	—	3	—	1	1
Freon TC	B46-70	1	2	1	1	3	—	1	2	—	4	—	1	1
Freon MF	B46-70	1	4	3	2	4	—	3	4	—	4	—	1	2
Freon BF	B46-70	2	4	3	1	4	—	—	4	—	4	—	1	2
Gasoline	B46-70	2	4	3	1	4	4	2	4	1	4	1	1	3
Glucose	C22-70	1	1	1	1	1	—	4	1	1	1	1	4	1
Glycerin	B46-70	1	1	1	1	1	3	1	1	1	1	1	2	1
Glycols	E50-70	1	1	1	1	1	4	4	1	1	1	1	1	1
N-Hexaldehyde	E50-70	4	1	1	4	4	—	2	2	—	2	4	2	3
Hexane	B46-70	1	4	2	1	4	1	2	4	1	4	1	1	2
N-Hexene 1	V14-75	2	4	2	1	4	1	2	4	—	4	1	1	2
Hexyl Alcohol	B46-70	1	3	2	1	2	4	4	3	—	2	2	2	2
Hydrazine	V14-75	2	1	2	4	1	—	4	1	—	3	4	4	2
Hydraulic Oil (Petroleum)	B46-70	1	4	2	1	4	1	1	4	1	3	1	1	2
Hydrobromic Acid	E50-70	4	1	4	1	4	4	4	1	—	4	3	2	1
Hydrobromic Acid 40%	E50-70	4	1	2	1	4	4	4	1	—	4	3	3	1
Hydrochloric Acid (cold) 37%	E50-70	3	1	2	1	2	4	4	1	2	3	2	1	1
Hydrochloric Acid (hot) 37%	V14-75	4	3	4	2	4	4	4	3	3	4	3	2	4
Hydrocyanic Acid	E50-70	2	1	2	1	2	4	—	1	—	3	2	4	1
Hydrofluoric Acid (conc.) cold	V14-75	4	3	4	1	4	4	3	3	—	4	4	4	1
Hydrofluoric Acid—Anhydrous		4	3	4	4	4	4	4	3	—	4	4	4	1
Hydrogen Gas	E50-70	1	1	1	1	1	2	1	1	—	3	3	3	1
Isobutyl Alcohol	E50-70	2	1	1	1	2	4	4	1	—	1	2	2	1
		DYNAMIC AND STATIC									**STATIC ONLY**			

FLUID	NATIONAL RECOMMENDED COMPOUND	NITRILE (BUNA N)	ETHYLENE-PROPYLENE	NEOPRENE	FLUOROCARBON	STYRENE-BUTASDIENE (SBR)	POLYACRYLATE	POLYURETHANE	BUTYL	EPICHLOROHYDRIN	SILICONE	FLUOROSILICONE	POLYSULFIDE	CHLOROSULFONATED POLYETHYLENE
Isopropyl Acetate	E50-70	4	2	4	4	4	4	4	2	—	4	4	2	4
Isopropyl Alcohol	E50-70	2	1	2	1	2	4	3	1	1	1	2	1	1
Isopropyl Chloride	V14-75	4	4	4	1	4	4	4	4	—	4	3	1	3
Isopropyl Ether	B46-70	1	4	2	1	4	1	1	4	1	4	1	2	3
Kerosene	B46-70	4	1	4	2	4	4	4	1	—	3	3	4	4
Lindol (Hydraulic fluid)	E50-70	1	4	2	1	4	3	1	4	1	3	3	1	2
Liquefied Petroleum Gas	B46-70	1	4	2	1	4	1	2	4	1	4	1	3	2
Lubricating Oils (petroleum)	B46-70	1	1	1	1	1	—	—	1	1	—	—	—	1
Mercury Chloride (aq)	E50-70	1	1	1	1	1	—	1	1	1	—	—	1	1
Mercury	E50-70	1	4	2	2	4	1	3	4	1	4	2	1	2
Methane	B46-70	4	1	2	4	3	4	4	1	4	4	4	2	4
Methyl Acetate	E50-70	4	2	2	4	4	4	4	2	—	4	4	2	4
Methyl Acrylate	E50-70	4	2	2	4	4	4	4	2	—	4	4	2	4
Methylacrylic Acid	E50-70	4	2	2	4	4	4	4	2	—	4	4	—	4
Methyl Alcohol	E50-70	1	1	1	4	1	4	4	1	2	1	1	2	1
Methyl Bromide	V14-75	2	4	4	1	4	3	—	4	—	—	1	—	4
Methyl Butyl Ketone	E50-70	4	1	4	4	4	4	4	1	—	3	4	2	4
Methyl Cellosolve	E50-70	3	2	3	4	4	4	4	2	—	4	4	—	2
Methyl Chloride	V14-75	4	3	4	2	4	4	4	3	—	4	2	3	4
Methyl Cyclopentane	V14-75	4	4	4	2	4	4	4	4	—	4	2	2	4
Methylene Chloride	V14-75	4	3	4	2	4	4	4	4	—	4	2	4	4
Methyl Ether	B46-70	1	4	3	1	4	4	—	4	—	1	1	2	3
Methyl Ethyl Ketone	E50-70	4	1	3	4	4	4	4	2	4	4	4	4	4
Methyl Formate	N11-70	4	2	2	—	4	—	—	2	4	—	—	3	2
Methyl Isobutyl Ketone	E50-70	4	2	4	4	4	4	4	3	4	4	4	2	4
Methyl Methacrylate	K4-60	4	3	4	4	4	4	—	4	4	4	4	2	4
Methyl Oleate	V14-75	4	2	4	2	4	—	—	2	—	—	2	—	4

Methyl Salicylate	E50-70	4	2	4	—	3	—	—	2	—	—	—	—	4
Naphtha	V14-75	2	4	3	1	4	2	2	4	1	4	2	2	4
Nitrobenzene	E50-70	4	1	4	2	4	4	4	1	4	4	4	4	4
Nitrobenzene (Ligroin)	B46-70	1	4	2	1	4	1	2	4	—	4	1	1	3
Nitroethane	N11-70	4	2	3	4	2	4	4	2	—	4	4	—	2
Nitrogen	E50-70	1	1	1	1	1	1	1	1	1	1	1	1	1
Nitrogen Tetroxide		4	3	4	4	4	4	4	3	—	4	4	4	4
Nitromethane	E50-70	4	2	2	4	2	4	4	2	—	4	4	3	3
N-Octane	B46-70	2	4	2	1	4	4	4	4	—	4	2	2	2
Octyl Alcohol	V14-75	2	3	1	1	2	4	4	3	—	2	2	2	2
Oleic Acid	V14-75	3	4	3	2	4	4	2	4	1	4	—	3	3
Oxygen—Cold	E50-70	2	1	1	1	2	2	1	1	2	1	1	2	1

FLUID	NATIONAL RECOMMENDED COMPOUND	NITRILE (BUNA N)	ETHYLENE-PROPYLENE	NEOPRENE	FLUOROCARBON	STYRENE-BUTASDIENE (SBR)	POLYACRYLATE	POLYURETHANE	BUTYL	EPICHLOROHYDRIN	SILICONE	FLUOROSILICONE	POLYSULFIDE	CHLOROSULFONATED POLYETHYLENE
		DYNAMIC AND STATIC									STATIC ONLY			
Oxygen—(200-400°F)	S59-70	4	3	4	2	4	4	4	2	4	2	4	4	4
Ozone	E50-70	4	1	3	1	4	2	1	4	1	1	2	1	1
Petroleum—below 250°F	B46-70	1	4	2	1	4	2	2	4	1	2	2	4	2
Petroleum—above 250°F	V14-75	4	4	2	2	4	4	4	4	2	4	4	4	4
Phosphoric Acid—20%	E50-70	2	1	2	1	2	—	1	2	—	2	2	4	1
Phosphoric Acid—45%	E50-70	4	1	2	1	3	—	1	2	—	3	2	4	2
Phosphorus	E50-70	4	1	4	1	4	—	—	1	—	—	1	—	4
Potassium Nitrate (aq)	E50-70	1	1	1	1	1	1	1	1	1	1	1	1	1
Potassium Sulfate (aq)	E50-70	1	1	1	1	1	4	1	1	1	1	1	2	2
Producer Gas	B46-70	1	4	2	1	4	2	1	4	—	2	2	4	2
Propane	B46-70	1	4	2	1	4	1	3	4	1	4	2	1	2
i-Propyl Acetate	E50-70	4	2	4	4	4	4	4	2	4	4	4	2	4
n-Propyl Acetate	E50-70	4	2	4	4	4	4	4	2	4	4	4	2	4

Propyl Acetone (Methyl Butyl Ketone)	E50-70	4	1	4	4	4	4	4	1	—	3	4	2	4
Propyl Alcohol	E50-70	1	1	1	1	1	4	4	1	1	1	1	1	1
Propyl Nitrate	E50-70	4	2	4	4	4	4	—	2	—	4	4	—	4
Propylene	V14-75	4	4	4	1	4	4	4	4	—	4	2	2	4
Propylene Oxide	E50-70	4	2	4	4	4	4	4	2	—	4	4	—	4
Pydraul, 10E, 29 ELT	V14-75	4	1	4	1	4	4	4	1	4	4	4	—	4
Pydraul, 30E, 50E, 65E, 90E	V14-75	4	1	4	1	4	4	4	1	4	1	1	—	1
Pydraul, 115E	V14-75	4	1	4	1	4	4	4	1	4	4	3	—	4
Pydraul, 230E, 312C, 540C	V14-75	4	4	4	1	4	4	4	4	4	4	4	—	4
Pyranol, Transformer Oil	B46-70	1	4	2	1	4	1	2	4	4	4	1	4	3
Radiation	E50-70	3	2	2	4	3	3	3	4	—	3	4	4	3
Rapeseed Oil	E50-70	2	1	2	1	4	2	2	1	1	4	1	4	2
Red Oil (MIL-H-5606)	D25	1	4	2	1	4	1	1	4	—	4	1	1	2
RJ-1 (MIL-F-25558 B)	C69	1	4	2	1	4	1	1	4	—	4	1	1	2
RP-1 (MIL-F-25576 C)	C69	1	4	2	1	4	1	1	4	—	4	1	1	2
Silicone Greases	E50-70	1	1	1	1	1	1	1	1	1	3	1	1	1
Silicone Oils	E50-70	1	1	1	1	1	1	1	1	1	3	1	1	1
Silver Nitrate	E50-70	2	1	1	1	1	1	1	1	—	1	1	2	1
Skydrol 500	E79	4	1	4	4	4	4	4	2	4	3	3	4	4
Skydrol 7000	E79	4	1	4	2	4	4	4	1	4	3	3	4	4
Sulfur Chloride (aq)	V14-75	3	4	3	1	4	4	—	4	—	3	1	4	2
Sulfur Dioxide(Dry)	E50-70	4	1	4	1	2	4	—	2	—	2	2	4	2
Sulfur Dioxide (Wet)	E50-70	4	1	2	1	4	4	—	1	—	2	2	4	1
Sulfur Dioxide (liquefied under pressure)	E50-70	4	1	4	1	4	4	—	2	—	2	2	4	4
Sulfur Hexafluoride	N11-70	2	1	1	1	4	4	—	1	1	2	2	3	2
		DYNAMIC AND STATIC									**STATIC ONLY**			

FLUID	NATIONAL RECOMMENDED COMPOUND	NITRILE (BUNA N)	ETHYLENE-PROPYLENE	NEOPRENE	FLUOROCARBON	STYRENE-BUTASDIENE (SBR)	POLYACRYLATE	POLYURETHANE	BUTYL	EPICHLOROHYDRIN	SILICONE	FLUOROSILICONE	POLYSULFIDE	CHLOROSULFONATED POLYETHYLENE
Sulfur Trioxide	V14-75	4	2	4	1	2	4	—	2	—	2	2	4	4
Sulfuric Acid (dilute)	V14-75	3	2	2	1	3	2	3	2	2	4	3	1	1
Sulfuric Acid (conc.)	V14-75	4	3	4	2	4	4	4	4	4	4	4	4	1
Sulfuric Acid (20% Oleum)	V14-75	4	4	4	1	4	4	4	4	4	4	4	4	4
Sulfurous Acid	E50-70	2	2	2	1	2	4	3	2	—	4	—	4	1
Tannic Acid	E50-70	1	1	1	1	2	4	1	1	—	2	—	1	1
Tertiary Butyl Alcohol	V14-75	2	2	2	1	2	4	4	2	—	2	2	2	2
Tertiary Butyl Catechol	V14-75	4	2	2	1	2	4	4	2	—	—	1	4	2
Tertiary Butyl Mercaptan	V14-75	4	4	4	1	4	4	4	4	—	4	—	4	4
Tetrabromoethane	V14-75	4	4	4	1	4	4	—	4	—	4	2	—	4
Tetrabromomethane	V14-75	4	4	4	1	4	—	—	4	—	4	2	—	—
Tetrabutyl Titanate	E50-70	2	1	2	1	2	—	—	2	—	—	1	—	1
Tetrachloroethylene	V14-75	4	4	4	1	4	4	4	4	—	4	2	3	4
Tetrahydrofuran	E50-70	4	2	4	4	4	4	3	3	—	4	4	1	4
Transmission Fluid Type A	B46-70	1	4	2	1	4	1	1	4	1	2	1	1	2
Trichloroethane	V14-75	4	4	4	1	4	4	4	4	—	4	2	4	4
Trichloroethylene	V14-75	4	4	4	1	4	4	4	4	4	4	2	4	4
Turbine Oil	V14-75	2	4	4	1	4	1	1	4	1	4	2	1	4
Wagner 21B Brake Fluid	E50-70	3	1	2	4	1	—	—	2	4	3	4	4	2
Water	C22-70	1	1	1	1	1	4	3	1	1	1	1	4	1

ELASTOMER TYPES/CAPABILITIES

TABLE B — FLUID COMPATIBILITY SUMMARY

NOMENCLATURE	NITRILE (BUNA N)	ETHYLENE-PROPYLENE	CHLORO-PRENE (NEOPRENE)	FLUORO-CARBON (VITON, FLUOREL)	SILICONE	FLUORO-SILICONE	STYRENE-BUTADIENE (SBR)
NATIONAL COMPOUND PREFIX	B, C, D	E	N	V	S	F	G
ASTM D2000 PREFIX	BG, BK, CH	CA	BC, BE	HK	FC, FE, GE	FK	AA, BA
ASTM D1418 DESIGNATION	NBR	EPDM, EPM	CR	FKM	PVMQ, VMQ	FVMQ	SBR
GENERAL							
HARDNESS RANGE, 'A" SCALE	40-90	50-90	40-80	70-90	40-80	60-80	40-80
RELATIVE O RING COST	LOW	LOW	LOW / MOD	MOD / HIGH	MODERATE	HIGH	LOW
CONTINUOUS HIGH TEMP LIMIT	257°F, 125°C	302°F, 150°C	284°F, 140°C	437°F, 225°C	482°F, 250°C	347°F, 175°C	212°F, 100°C
LOW TEMPERATURE CAPABILITY	-67°F,-55°C	67°F, -55°C	67°F, -55°C	40°F-40°C	103°F, 75°C	85°F, 65°C	-67°F, 55°C
DYNAMIC SERVICE / ABRASION RESISTANCE	EXCELLENT	VERY GOOD	VERY GOOD	VERY GOOD	POOR	POOR	EXCELLENT
COMPRESSION SET RESISTANCE	VERY GOOD	VERY GOOD	GOOD	VERY GOOD	EXCELLENT	VERY GOOD	GOOD
FLUID COMPATIBILITY SUMMARY							
ACID INORGANIC	FAIR	GOOD	FAIR / GOOD	EXCELLENT	GOOD	GOOD	FAIR / GOOD
ACID, ORGANIC	GOOD	VERY GOOD	GOOD	GOOD	EXCELLENT	GOOD	GOOD
AGING, (OXYGEN, OZONE WEATHER)	FAIR / POOR	VERY GOOD	GOOD	VERY GOOD	EXCELLENT	EXCELLENT	POOR
AIR	FAIR	VERY GOOD	GOOD	VERY GOOD	EXCELLENT	VERY GOOD	FAIR
ALCOHOLS	VERY GOOD	EXCELLENT	VERY GOOD	FAIR	VERY GOOD	VERY GOOD	VERY GOOD
ALDEHYDES	FAIR / POOR	VERY GOOD	FAIR / POOR	POOR	GOOD	POOR	FAIR / POOR
ALKALIS	FAIR / GOOD	EXCELLENT	GOOD	GOOD	VERY GOOD	GOOD	FAIR / GOOD
AMINES	POOR	VERY GOOD	VERY GOOD	POOR	GOOD	POOR	FAIR
ANIMAL OILS	EXCELLENT	GOOD	GOOD	VERY GOOD	GOOD	EXCELLENT	POOR
ESTERS ALKYL PHOSPHATE (SKYDROL)	POOR	EXCELLENT	POOR	POOR	GOOD	FAIR / POOR	POOR
ESTERS ARYL PHOSPHATE	FAIR / POOR	EXCELLENT	FAIR / POOR	EXCELLENT	GOOD	VERY GOOD	POOR
ESTERS, SILICATE	GOOD	POOR	FAIR	EXCELLENT	POOR	VERY GOOD	POOR
ETHERS	POOR	FAIR	POOR	POOR	POOR	FAIR	POOR
HYDROCARBON FUELS, ALIPHATIC	EXCELLENT	POOR	FAIR	EXCELLENT	FAIR	EXCELLENT	POOR
HYDROCARBON FUELS, AROMATIC	GOOD	POOR	FAIR / POOR	EXCELLENT	POOR	VERY GOOD	POOR
HYDROCARBONS, HALOGENATED	FAIR / POOR	POOR	POOR	EXCELLENT	POOR	VERY GOOD	POOR
HYDROCARBON OILS, HIGH ANILINE	EXCELLENT	POOR	GOOD	EXCELLENT	VERY GOOD	EXCELLENT	POOR
HYDROCARBON OILS, LOW ANILINE	VERY GOOD	POOR	FAIR / POOR	EXCELLENT	FAIR	VERY GOOD	POOR
IMPERMEABILITY TO GASES	GOOD	GOOD	GOOD	VERY GOOD	POOR	POOR	FAIR / GOOD
KETONES	POOR	EXCELLENT	POOR	POOR	POOR	FAIR / POOR	POOR
SILICONE OILS	EXCELLENT	EXCELLENT	EXCELLENT	EXCELLENT	GOOD	EXCELLENT	EXCELLENT
VEGETABLE OILS	EXCELLENT	GOOD	GOOD	EXCELLENT	EXCELLENT	EXCELLENT	POOR
WATER / STEAM	GOOD	EXCELLENT	FAIR	FAIR	FAIR	FAIR	FAIR