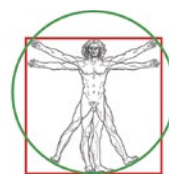




Technical Handbook of Materials

ITALIAN QUALITY MADE



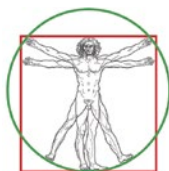
ETTER
GUARNIZIONI INDUSTRIALI



Etter provides a complete set of seals for gasket in various types of materials. Next to the historical production of O -Rings and to design rubber items, there are a wide range of customized products pleased to satisfy the most varied requirements.

Real benefits, such as costs reduction, the guarantee of continuity in the supply of the products, and especially the support expert counselling and specialist consolidated, makes ETTER the real and reliable partner.

ETTER is able to activate a chain of processes complex and diversified production, which allow obtaining products that express the real essence of Made in Italy.



ETTER
GUARNIZIONI INDUSTRIALI

Strengths

Experience

Experience and constant technical research enable it to offer excellent customized solutions. The wide knowledge of materials used in the world of seals, gaskets profiles and the basic dynamics, complete our profile.



Expertise

For over fifteen years, thanks to constant contact with the technical departments of our customers we have increased our expertise in various industrial applications, to provide quality, reliability and competence.

Technical assistance

From design to installation, we are engaged in research of advanced sealing solutions. By partnering with industry companies, design studios and laboratories university, we can offer the most extensive technical skills.

ITALIAN QUALITY MADE

Production flexibility

Our staff it is composed of subjective highly qualified technical able to design articles, molds and precise manufacturing processes, flexible and with maximum optimization of the time's production.

Ratio quality/price

Years of experience and continuous modifications have enabled the optimization of the productive cycles that (thanks to the use of high quality raw materials) they have allowed us to create an excellent quality/price ratio of our products.

Wide range of products

The availability of a wide range of products for different industries and a large stock of raw materials and standard items allow us to meet the multiple needs of our customers.

COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
- 3 - Doubtful (sometimes OK for static seal)
- 4 - Unsatisfactory
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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
A-A-52624	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
A-A-59290	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Abietic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Acetaldehyde	3	3	2	4	1	1	3	3	3	4	4	2	2	2	2	3	4	2
Acetamide	1	1	1	3	1	1	2	1	4	4	4	2	4	4	4	2	1	2
Acetanilide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Acetic Acid 30%	X	X	1	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Acetic Acid 5%	2	2	1	1	1	1	1	1	2	4	4	1	2	2	2	1	2	1
Acetic Acid Glacial	2	2	1	2	1	1	3	4	2	4	4	2	2	2	2	3	2	1
Acetic Acid Hot High Pressure	4	4	3	4	2	1	3	4	4	4	4	4	4	4	4	3	4	3
Acetic Acid Anhydride	3	4	2	4	1	1	2	2	2	4	4	2	2	2	2	2	4	2
Acetoacetic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Acetone	4	4	1	4	2	1	2	4	4	4	4	1	4	4	4	3	4	4
Acetone Cyanohydrin	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Acetonitrile (Methyl Cyanide)	3	3	1	3	1	1	1	X	X	X	X	X	X	X	X	X	X	X
Acetophenetidine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Acetophenone	4	4	1	4	2	1	2	4	4	4	4	2	4	4	4	4	4	4
Acetoluidide	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Acetyl Acetone	4	4	1	4	2	1	2	4	4	4	4	1	4	4	4	4	4	4
Acetyl Bromide	4	4	1	1	1	1	2	4	4	4	4	1	4	4	4	4	4	4
Acetyl Chloride	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Acetylene	1	1	1	1	1	1	1	2	2	4	4	1	2	2	2	2	X	2
Acetylene Tetrabromide	4	4	1	1	1	1	1	2	4	X	4	1	X	X	X	X	X	X
Acetylene Tetrachloride	4	4	1	1	1	1	1	2	4	X	4	1	X	X	X	X	X	X
Acetylsalicylic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Acids, Non-organic	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Acids, Organic	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aconitic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Acridine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Acrolein	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Acrylic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Acrylonitrile	4	4	4	3	1	1	3	4	3	4	4	4	X	3	3	3	4	4
Adipic Acid	1	1	2	X	1	1	2	X	X	X	X	X	X	X	X	X	X	X
Aero Lubriplate	1	1	4	1	1	1	2	1	2	1	1	4	4	4	4	1	1	2
Aero Shell 17 Grease	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	1	1	2
Aero Shell 560	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Aero Shell 750	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Aero Shell 7A Grease (MIL-G-23827)	2	2	4	1	1	1	2	2	4	1	1	4	4	4	4	1	1	2
Aero Shell IAC	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	1	1	2
Aerosafe 2300	4	4	1	4	1	1	2	4	4	4	4	2	4	4	4	4	3	3
Aerosafe 2300W	4	4	1	4	1	1	2	4	4	4	4	2	4	4	4	4	3	3
Aerocene 50 (50% Hydrazine 50% UDMH)	3	3	1	4	3	2	2	4	4	X	4	1	4	4	4	4	4	4
Air, Below 200-F	2	2	1	1	1	1	1	1	2	1	2	1	2	2	2	1	1	1

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)
 NOTE: *These temperature ranges will apply to the majority of media for which the material is potentially recommended. With some media however, the service temperature range may be significantly different. ALWAYS TEST UNDER ACTUAL SERVICE CONDITIONS.

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Air, 200 - 300- F	3	3	2	1	1	1	1	2	4	2	3	2	4	4	4	2	1	1
Air, 300 - 400- F	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	1
Air, 400 - 500- F	4	4	4	3	2	2	3	4	4	4	4	4	4	4	4	4	4	2
Aliphatic Dicarboxylic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Alkanes (Paraffin Hydrocarbons)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Alkanesulfonic Acid	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Alkazene	4	4	4	2	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Alkenes (Olefi n Hydrocarbons)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Alkyl Acetone	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Alkyl Alcohol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Alkyl Amine	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Alkyl Aryl Sulfonates	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Alkyl Aryl Sulfonics	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Alkyl Benzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Alkyl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Alkyl Lithium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alkyl Sulfi de	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Alkynaphthalene Sulfonic Acid	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Allyl Chloride	2	2	4	1	1	1	X	1	X	X	X	X	X	X	X	X	X	X
Allylidene Diacetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Alpha Picoline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aluminum Acetate	2	2	1	4	1	1	2	2	2	4	4	1	4	1	1	4	4	4
Aluminum Bromide	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1
Aluminum Chlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aluminum Chloride	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	2
Aluminum Ethylate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aluminum Fluoride	1	1	1	1	1	1	1	1	1	X	3	1	1	1	2	1	1	2
Aluminum Fluorosilicate*	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aluminum Formate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aluminum Hydroxide	2	X	1	2	1	1	1	X	X	X	X	X	X	X	X	X	X	2
Aluminum Linoleate	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Aluminum Nitrate	1	1	1	1	1	1	1	1	1	X	3	1	1	1	1	1	X	2
Aluminum Oxalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aluminum Phosphate	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	2
Aluminum Potassium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aluminum Salts	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1
Aluminum Sodium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aluminum Sulfate	1	1	1	1	1	1	1	1	2	4	4	1	1	1	1	1	1	1
Alums-NH3-Cr-K	1	1	1	4	1	1	2	1	1	4	X	1	1	1	1	1	4	1
Ambrex 33 (Mobil)	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	3	3	4
Ambrex 830 (Mobil)	1	1	3	1	1	1	2	2	4	1	1	3	4	4	4	2	1	2
Amines-Mixed	4	4	2	4	3	2	3	2	2	4	4	2	2	2	2	4	4	2
Aminoanthraquinone	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Aminoazobenzene	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aminobenzene Sulfonic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aminobenzoic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aminopyridine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aminosalicic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ammonia (Anhydrous)	2	2	1	4	3	2	2	1	4	4	4	1	4	4	4	4	4	2
Ammonia and Lithium Metal in Solution	2	2	2	4	4	4	3	X	4	4	4	2	4	4	4	4	4	4
Ammonia, Gas, Cold	1	1	1	4	2	1	2	1	1	4	X	1	1	1	1	1	4	1
Ammonia, Gas, Hot	4	4	2	4	3	2	2	2	4	4	X	2	4	4	4	2	4	X
Ammonia, Liquid (Anhydrous)	2	2	1	4	3	2	2	1	4	4	4	1	4	4	4	2	4	2
Ammonium Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Arsenate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Benzoate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Bicarbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Bisulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Bromide	1	1	1	1	1	1	1	1	1	X	1	1	X	X	1	1	X	X
Ammonium Carbamate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Carbonate	4	4	1	1	1	1	1	1	1	4	4	1	X	X	1	1	X	X
Ammonium Chloride, 2N	1	1	1	1	1	1	1	1	1	X	1	1	X	X	1	1	X	X
Ammonium Citrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Dichromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Diphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Fluoride	1	1	1	1	1	1	1	1	1	X	1	1	X	X	1	1	X	X
Ammonium Fluorosilicate*	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ammonium Formate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Hydroxide, 3 Molar	1	1	1	3	2	2	2	1	2	4	4	1	2	2	2	1	1	1
Ammonium Hydroxide, Concentrated	4	4	1	4	3	2	2	1	3	4	4	1	3	3	3	1	1	1
Ammonium Iodide	1	1	1	1	1	1	1	1	1	X	1	1	X	X	1	1	X	X
Ammonium Lactate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Metaphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Molybdenate*	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Nitrate, 2N	1	1	1	X	X	X	2	1	1	2	X	1	X	X	3	1	X	X
Ammonium Nitrite	1	1	1	X	1	1	2	1	1	X	X	1	1	1	1	1	X	2
Ammonium Oxalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Perchlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Perchloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ammonium Persulfate 10%	4	4	1	X	X	X	2	1	4	4	4	1	X	1	1	X	X	X
Ammonium Persulfate Solution	4	4	1	X	1	1	2	X	4	4	4	1	X	1	1	X	X	X
Ammonium Phosphate	1	1	1	4	1	1	2	1	1	X	X	1	X	1	1	1	X	1
Ammonium Phosphate, Dibasic	1	1	1	X	1	1	2	1	1	X	X	1	X	1	1	1	X	1
Ammonium Phosphate, Mono-Basic	1	1	1	X	1	1	2	1	1	X	X	1	X	1	1	1	X	1
Ammonium Phosphate, Tribasic	1	1	1	X	1	1	2	1	1	X	X	1	X	1	1	1	X	1
Ammonium Phosphite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hilif uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Ammonium Picrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Polysulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Salicylate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Salts	1	1	1	3	1	1	2	1	1	3	X	1	X	1	1	1	3	1
Ammonium Sulfamate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Sulfate	1	1	1	4	1	1	2	1	2	4	X	1	1	1	1	1	X	X
Ammonium Sulfate Nitrate	1	1	1	4	1	1	2	1	2	4	X	1	1	1	1	1	X	X
Ammonium Sulfide	1	1	1	4	1	1	2	1	2	4	X	1	1	1	1	1	X	X
Ammonium Sulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Thiocyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Thioglycolate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Thiosulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Tungstate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ammonium Valerate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Amyl Acetate	1	1	3	4	1	1	3	4	4	4	4	3	4	4	4	4	4	4
Amyl Alcohol	2	2	1	2	1	1	1	2	2	4	4	1	2	2	2	2	1	4
Amyl Borate	1	1	4	1	1	1	2	1	4	X	X	4	4	4	4	1	X	X
Amyl Butyrate	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Amyl Chloride	X	X	4	1	1	1	2	4	4	4	X	4	4	4	4	4	2	4
Amyl Chloronaphthalene	4	4	4	1	1	1	2	4	4	4	X	4	4	4	4	4	2	4
Amyl Cinnamic Aldehyde	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Amyl Laurate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Amyl Mercaptan	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Amyl Naphthalene	4	4	4	1	1	1	2	4	4	2	4	4	4	4	4	4	1	4
Amyl Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Amyl Nitrite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Amyl Phenol	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Amyl Propionate	1	1	4	1	2	1	X	2	4	1	1	4	4	4	4	2	1	2
Anderol, L-826 (di-ester)	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Anderol, L-829 (di-ester)	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Anderol, L-774 (di-ester)	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
ANG-25 (Di-ester Base) (TG749)	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	2
ANG-25 (Glycerol Ester)	2	2	1	1	1	1	1	2	2	4	4	2	2	2	2	2	2	2
Aniline	4	4	2	3	1	1	2	4	4	4	4	2	4	4	4	4	3	4
Aniline Dyes	4	4	2	2	1	1	2	2	2	4	4	2	2	2	2	2	2	3
Aniline Hydrochloride	2	2	2	2	1	1	2	4	3	4	4	2	4	2	2	4	2	3
Aniline Oil	4	4	2	3	2	2	2	4	4	4	4	2	4	4	4	4	3	4
Aniline Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Aniline Sulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Animal Fats	1	1	2	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Animal Oil (Lard Oil)	1	1	2	1	1	1	2	2	4	1	2	2	4	4	4	2	1	2
Anisole	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Anisoyl Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hilif uor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfl uoroelastomer (Paroil uor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

NOTE: *These temperature ranges will apply to the majority of media for which the material is potentially recommended. With some media however, the service temperature range may be significantly different. ALWAYS TEST UNDER ACTUAL SERVICE CONDITIONS.

COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
- 3 - Doubtful (sometimes OK for static seal)
- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
AN-O-3 Grade M	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	2
AN-O-366	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	2	1	4
AN-O-6	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
Ansul Ether 161 or 181	3	3	3	4	1	1	3	4	4	4	2	3	4	4	4	4	3	4
Anthracene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Anthranilic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Anthraquinone	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Anti-freeze Solutions	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Antimony Chloride	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
Antimony Pentachloride	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
Antimony Pentafuoride	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Antimony Sulfate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Antimony Tribromide	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
Antimony Trichloride	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
Antimony Trifluoride	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
Antimony Trioxide	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	2	1	4
AN-W-O-366b Hydr. Fluid	1	1	4	1	1	1	1	2	4	2	2	4	4	4	4	2	1	4
Aqua Regia	4	3	3	2	2	2	3	4	X	X	X	X	X	X	X	X	X	X
Arachidic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Argon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Armor All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Aroclor, 1248	3	3	2	1	1	1	1	4	4	4	4	2	4	4	4	4	2	2
Aroclor, 1254	4	4	2	1	1	1	1	4	4	4	4	4	4	4	4	4	2	3
Aroclor, 1260	1	1	X	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Aromatic Fuel -50%	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Arsenic Acid	1	1	1	1	1	1	1	1	1	3	3	1	1	1	2	1	1	1
Arsenic Oxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Arsenic Trichloride	1	1	4	4	1	1	X	1	X	X	X	X	X	X	X	X	X	X
Arsenic Trioxide	1	1	4	4	1	1	X	1	X	X	X	X	X	X	X	X	X	X
Arsenic Trisulfide	1	1	4	4	1	1	X	1	X	X	X	X	X	X	X	X	X	X
Arsenites	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Arsine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Aryl Orthosilicate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ascorbic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Askarel Transformer Oil	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Aspartic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Asphalt	2	2	4	1	1	1	2	2	4	2	2	4	4	4	4	2	2	4
ASTM Oil, No. 1	1	1	4	1	1	1	1	1	4	1	1	4	4	4	4	2	1	1
ASTM Oil, No. 2	1	1	4	1	1	1	1	2	4	1	2	4	4	4	4	4	1	4
ASTM Oil, No. 3	1	1	4	1	1	1	1	4	4	1	2	4	4	4	4	4	1	3
ASTM Oil, No. 4	2	2	4	1	1	1	1	4	4	2	4	4	4	4	4	4	2	4
ASTM Oil, No. 5	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
ASTM Reference Fuel A	1	1	4	1	1	1	1	2	4	2	1	4	4	4	4	2	1	4

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hilfl uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
ASTM Reference Fuel B	1	1	4	1	1	1	1	4	4	4	2	4	4	4	4	4	1	4
ASTM Reference Fuel C	2	2	4	1	1	1	1	4	4	4	4	4	4	4	4	4	2	4
ASTM Reference Fuel D	2	2	4	1	1	1	4	4	X	X	X	X	X	X	X	X	X	X
ATL-857	2	2	4	1	1	1	1	4	4	2	4	4	4	4	4	4	2	4
Atlantic Dominion F	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	4	1	4
Atlantic Ultra Gear-e	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Atlantic Ultra Gear-EP Lube	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	4	1	4
Aure 903R (Mobil)	1	1	4	1	1	1	2	2	4	1	1	4	4	4	2	4	4	4
AUREX 256	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Automatic Transmission Fluid	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	3	X	4
Automotive Brake Fluid	3	3	1	4	1	1	2	2	1	4	4	2	X	X	X	2	4	3
AXAREL 9100	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Azobenzene	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Bardol B	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Barium Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Barium Chlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Barium Chloride	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium Cyanide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium Hydroxide	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Barium Iodide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Barium Oxide	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Barium Peroxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Barium Polysulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Barium Salts	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Barium Sulfate	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Barium Sulfide	1	1	1	1	1	1	1	1	2	4	1	1	2	1	1	1	1	1
Bayol 35	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	4	1	4
Bayol D	1	1	4	1	1	1	2	2	4	1	4	4	4	4	4	4	1	4
Beer	1	1	1	1	1	1	1	1	1	4	2	1	1	1	1	1	1	1
Beet Sugar Liquids	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	
Beet Sugar Liquors	1	1	1	1	1	1	1	2	1	4	4	1	1	1	1	1	1	1
Benzaldehyde	4	4	1	4	1	1	2	4	4	4	4	1	4	4	4	1	4	2
Benzaldehyde Disulfonic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Benzamide	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzanthrone	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	3	4
Benzene Hexachloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Benzenesulfonic Acid 10%	4	4	4	1	1	1	2	2	4	4	4	4	4	4	4	1	2	4
Benzidine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzidine 3 Sulfonic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzil	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzilic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Benzene (Ligroin)	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	3	1	4
Benzocatechol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzochloride	4	4	1	1	1	1	1	4	4	4	X	2	4	4	4	4	1	X
Benzoic Acid	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Benzoin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzonitrile	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Benzophenone	X	X	2	1	1	1	2	X	4	4	4	2	4	4	X	X	1	X
Benzoquinone	X	X	2	1	1	1	2	X	4	4	4	2	4	4	X	X	X	X
Benzotrifluoride	4	4	1	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Benzotrifluoride	4	4	1	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Benzoyl Chloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzoyl Peroxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Benzoylsulfonic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzyl Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Benzyl Alcohol	4	4	2	1	1	1	2	2	4	4	4	2	4	4	4	2	2	2
Benzyl Amine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Benzyl Benzoate	4	4	4	1	1	1	2	4	4	4	4	2	4	4	4	4	1	4
Benzyl Bromide	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Benzyl Butyl Phthalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Benzyl Chloride	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Benzyl Phenol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Benzyl Salicylate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Beryllium Chloride	1	1	1	1	1	1	1	3	3	3	3	1	3	3	3	3	3	3
Beryllium Fluoride	1	1	1	1	1	1	1	3	3	3	3	1	3	3	3	3	3	3
Beryllium Oxide	1	1	1	1	1	1	1	3	3	3	3	1	3	3	3	3	3	3
Beryllium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Bismuth Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Bismuth Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Bismuth Oxichloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Bittern	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Black Liquor	2	X	1	1	4	3	1	1	X	X	X	X	X	X	X	X	X	X
Black Point 77	1	1	1	1	1	1	1	3	3	3	3	1	3	3	3	3	3	3
Blast Furnace Gas	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	1
Bleach Liquor	3	3	1	1	1	1	1	2	3	4	4	1	2	2	3	1	2	2
Bleach Solutions	X	X	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Blood	2	0	1	1	1	1	3	1	X	X	X	X	X	X	X	X	X	2
Borax	2	2	1	1	1	1	1	4	2	2	1	1	2	2	2	4	2	2
Borax Solutions	X	X	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Bordeaux Mixture	2	2	1	1	1	1	1	2	2	4	4	1	2	2	2	1	2	2
Boric Acid	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1
Boric Oxide	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Borneol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Bornyl Acetate	2	2	4	1	2	1	X	4	4	4	3	4	4	4	4	4	2	X

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- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
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- 4 - Unsatisfactory
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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Bornyl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Bornyl Formate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Boron Fluids (HEF)	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Boron Hydride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Boron Phosphate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Boron Tribromide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Boron Trichloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Boron Trifluoride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Boron Trioxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
BP Turbine Oil 2197	4	4	4	3	1	1	2	4	4	4	4	4	4	4	4	4	4	4
Brake Fluid DOT 3 (Glycol Type)	3	3	1	4	1	1	2	2	1	X	4	2	X	X	X	2	4	3
Brake Fluid DOT 4	3	3	1	4	1	1	2	2	1	X	4	2	X	X	X	2	4	3
Brake Fluid DOT 5	2	1	1	1	1	1	1	2	X	X	X	1	X	X	X	X	3	4
Bray GG-130	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Brayco 719-R	3	3	1	4	1	1	2	2	X	4	4	2	2	2	2	2	2	2
Brayco 885	2	2	4	1	1	1	2	4	4	2	1	4	4	4	4	4	2	4
Brayco 910	2	2	1	4	1	1	2	2	2	3	3	1	1	1	1	1	4	4
Bret 710	2	2	1	4	1	1	2	2	2	3	3	1	1	1	1	1	4	4
Brine	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Brine (Seawater)	1	1	1	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Brom - 113	3	3	4	X	X	X	3	4	4	X	X	4	X	X	X	4	X	4
Brom - 114	2	2	4	2	1	1	3	2	4	X	X	4	4	4	4	2	X	4
Bromic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Bromine	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Bromine Pentafluoride	4	4	4	4	2	2	3	4	4	4	4	4	4	4	4	4	4	4
Bromine Trifluoride	4	4	4	4	2	2	3	4	4	4	4	4	4	4	4	4	4	4
Bromine Water	4	4	2	1	1	1	3	4	4	4	4	4	4	4	4	1	2	4
Bromobenzene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Bromobenzene Cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Bromochlorotrifluoroethane (Halothane)	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Bromoform	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Bromomethane (Methyl Bromide)	2	2	4	1	1	1	1	4	4	3	X	4	4	4	4	4	1	X
Bromotrifluoroethylene (BFE)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Bromotrifluoromethane (F-13B1)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Brucine Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Buffered Oxide Etchants	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Bunker Oil	1	1	4	1	1	1	2	4	4	1	2	4	4	4	4	4	1	2
Bunker's "C" (Fuel Oil)	1	X	X	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Butadiene (Monomer)	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Butane	1	1	4	1	1	1	2	1	3	1	1	4	4	4	4	2	3	4
Butane, 2,2-Dimethyl	1	1	4	1	1	1	2	2	3	1	4	4	4	4	4	2	3	4
Butane, 2,3-Dimethyl	1	1	4	1	1	1	2	2	3	1	4	4	4	4	4	2	3	4
Butanediol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifi uor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfl uoroelastomer (Paraffin uor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Butanol (Butyl Alcohol)	1	1	2	1	1	1	1	1	1	4	4	2	1	1	1	1	1	2
Butene 2-Ethyl (1-Butene 2-Ethyl)	1	1	4	1	1	1	1	4	4	1	4	4	4	4	4	4	3	4
Butter	1	1	1	1	1	1	1	2	X	X	1	3	X	X	X	X	X	2
Butter-Animal Fat	1	1	1	1	1	1	1	2	4	1	1	2	4	4	4	2	1	2
Butyl Acetate or n-Butyl Acetate	4	4	2	4	1	1	4	4	4	4	2	4	4	4	4	4	4	
Butyl Acetyl Ricinoleate	2	2	1	1	1	1	1	2	4	X	4	1	4	4	4	2	2	X
Butyl Acrylate	4	4	1	4	1	1	4	4	4	4	X	4	4	4	4	4	4	2
Butyl Alcohol	1	1	2	1	1	1	1	1	1	4	4	2	1	1	1	1	1	2
Butyl Alcohol (Secondary)	2	2	2	1	1	1	1	2	2	4	4	2	2	2	2	2	2	2
Butyl Alcohol (Tertiary)	2	2	2	1	1	1	1	2	2	4	4	2	2	2	2	2	2	2
Butyl Amine or N-Butyl Amine	1	1	3	4	1	1	3	4	4	4	4	4	4	4	4	4	4	4
Butyl Benzoate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Benzoate or n-Butyl Benzoate	4	4	1	1	1	1	4	2	4	X	1	4	4	4	4	1	X	
Butyl Benzolate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Butyl Butyrate or n-Butyl Butyrate	4	4	1	1	1	1	4	4	4	X	1	4	4	4	4	1	X	
Butyl Carbitol	4	4	1	3	1	1	2	3	4	4	X	1	4	4	4	2	4	4
Butyl Cellosolve	3	3	2	4	1	1	2	3	4	4	4	2	4	4	4	4	4	X
Butyl Cellosolve Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Cellosolve Adipate	4	4	2	2	1	1	2	4	4	4	4	2	4	4	4	4	2	2
Butyl Chloride	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Butyl Ether or n-Butyl Ether	3	3	3	4	1	1	4	4	4	3	3	4	4	4	4	3	4	
Butyl Glycolate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Lactate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Laurate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Mercaptan (Tertiary)	4	4	4	1	1	1	4	4	4	4	4	4	4	4	4	X	4	
Butyl Methacrylate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Oleate	4	4	2	1	1	1	2	4	4	X	X	2	4	X	4	4	2	X
Butyl Oxalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyl Stearate	2	2	4	1	1	1	2	4	4	X	X	4	4	4	4	4	2	X
Butylbenzoic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Butylene	2	2	4	1	1	1	2	3	4	4	4	4	4	4	4	4	2	4
Butyraldehyde	4	4	2	4	1	1	2	4	4	4	4	2	4	4	4	4	4	4
Butyric Acid	4	4	2	2	1	1	1	4	4	4	X	2	4	X	X	4	X	X
Butyric Anhydride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyrolacetone	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Butyryl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cadmium Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cadmium Cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cadmium Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cadmium Oxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cadmium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cadmium Sulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcine Liquors	1	1	1	1	1	1	1	X	X	4	4	1	X	X	X	X	1	X

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Calcium Acetate	2	2	1	4	1	1	2	2	4	4	4	1	4	1	1	2	4	4
Calcium Arsenate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Benzoate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Calcium Bicarbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Bisulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Bisulfite	2	2	1	2	1	1	1	2	2	3	3	1	4	4	4	1	3	3
Calcium Bromide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Carbide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Calcium Carbonate	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1
Calcium Chlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Chloride	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Chromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Cyanamide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Calcium Cyanide	1	1	1	X	1	1	1	1	1	X	X	1	1	1	1	1	X	1
Calcium Fluoride	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Gluconate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Hydride	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Hydrosulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Hydroxide	1	1	1	1	1	1	1	1	1	4	2	1	1	1	1	1	1	1
Calcium Hypochlorite	2	2	1	1	1	1	1	2	2	4	4	1	2	2	2	1	2	2
Calcium Hypophosphite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Lactate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Naphthenate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Calcium Nitrate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Calcium Oxalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Oxide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Calcium Permanganate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Calcium Peroxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Calcium Phenolsulfonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Phosphate	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	X	1
Calcium Phosphate Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Propionate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Pyridine Sulfonate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Calcium Salts	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Calcium Silicate	1	1	1	1	1	1	1	1	1	X	X	1	1	1	1	1	X	X
Calcium Stearate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Calcium Sulfamate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Calcium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Sulfide	1	1	1	1	1	1	1	1	2	4	1	1	2	2	2	1	1	1
Calcium Sulfite	1	1	1	1	1	1	1	1	2	4	1	1	2	2	2	1	1	1
Calcium Thiocyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Calcium Thiosulfate	2	2	1	1	1	1	1	1	2	4	1	1	2	2	2	1	1	1
Calcium Tungstate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
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- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Caliche Liquors	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Camphene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Camphor	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Camphoric Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cane Sugar Liquors	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Capric Acid	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Caproic Acid	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Caproic Aldehyde	X	X	2	4	1	1	3	X	X	4	4	2	2	2	2	X	4	2
Caprolactam	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Capronaldehyde	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Carbamate	3	3	2	1	1	1	1	2	4	4	4	2	4	4	4	2	1	X
Carbazole	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Carbitol	2	2	2	2	1	1	1	2	2	4	4	2	2	2	2	2	2	2
Carbolic Acid (Phenol)	4	4	2	1	1	1	1	4	4	4	3	2	4	4	4	4	1	4
Carbon Bisulfide	4	4	4	1	1	1	2	4	4	3	X	4	4	4	4	4	1	4
Carbon Dioxide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carbon Dioxide (Explosive Decompression Use)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Carbon Disulfide	4	4	4	1	1	1	2	4	4	3	X	4	4	4	4	4	1	4
Carbon Fluorides	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Carbon Monoxide	1	1	1	1	1	1	1	2	2	X	1	1	2	2	2	2	2	1
Carbon Tetrabromide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Carbon Tetrachloride	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Carbon Tetrafluoride	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Carbonic Acid	2	2	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1
Casein	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Castor Oil	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Caustic Lime	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Caustic Potash	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Caustic Soda (Sodium Hydroxide)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cellosolve	4	4	2	4	1	1	3	4	4	4	4	2	4	4	4	4	4	4
Cellosolve, Acetate	4	4	2	4	1	1	2	4	4	4	4	2	4	4	4	4	4	4
Cellosolve, Butyl	4	4	2	4	1	1	2	4	4	4	4	2	4	4	4	4	4	4
Cellugard	1	1	1	1	1	1	1	1	1	3	4	1	1	1	1	1	1	1
Cellulose Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Cellulose Acetate Butyrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cellulose Ether	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Cellulose Nitrate*	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cellulose Tripropionate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cellulube (Phosphate Esters)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cellultherm 2505A	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Cerium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cerous Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cerous Fluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Cerous Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Cesium Formate	X	X	2	4	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cetane (Hexadecane)	1	1	4	1	1	1	2	2	4	1	4	4	4	4	4	2	3	4
Cetyl Alcohol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Chaulmoogric Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
China Wood Oil (Tung Oil)	1	1	4	1	1	1	2	2	4	X	3	3	4	4	4	3	2	4
Chloral	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chloramine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chloranthraquinone	2	2	4	1	2	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlordane	2	2	4	1	1	1	2	3	4	X	X	4	4	4	4	3	2	4
Chlorextol	2	2	4	1	1	1	2	2	4	2	4	4	4	4	4	4	2	4
Chloric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chlorinated Solvents, Dry	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Chlorinated Solvents, Wet	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Chlorine (Dry)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorine (Plasma)	X	X	X	X	3	2	X	X	X	X	X	X	X	X	X	X	X	X
Chlorine (Wet)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Chlorine Dioxide	4	4	3	1	1	1	2	4	4	4	4	3	4	4	4	3	2	X
Chlorine Dioxide, 8% Cl as NaClO2 in solution	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	X
Chlorine Trifluoride	4	4	4	4	2	2	4	4	4	4	4	4	4	4	4	4	4	4
Chlorine Water (Chemical Processing)	3	3	2	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Chloro 1-Nitro Ethane (1-Chloro 1-Nitro Ethane)	4	4	4	4	1	1	3	4	4	4	4	4	4	4	4	4	4	4
Chloro Oxyl fluorides	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Chloro Xylenols	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chloroacetaldehyde	3	3	1	3	2	2	X	1	1	4	4	1	1	1	1	1	1	2
Chloroacetic Acid	4	4	2	4	1	1	2	4	4	4	4	2	4	4	4	1	4	X
Chloroacetone	4	4	1	4	2	1	2	4	4	4	4	2	4	4	4	4	4	4
Chloroacetyl Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chloroamino Benzoic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chloroaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chlorobenzaldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chlorobenzene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Chlorobenzene (Mono)	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Chlorobenzene Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorobenzene Trifluoride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorobenzochloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorobenzotrifluoride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorobromo Methane	4	4	2	1	1	1	1	4	4	4	4	2	4	4	4	4	2	4
Chlorobromopropane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorobutadiene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Chlorobutane (Butyl Chloride)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Chlorododecane	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	1	4
Chloroethane	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2

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Chloroethane Sulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chloroethylbenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chloroform	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	4	4
Chlorohydrin	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chloronaphthalene or o-Chloronaphthalene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Chloronitrobenzene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chlorophenol or o-Chlorophenol	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Chloropicrin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chloroprene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorosilanes	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chlorosulfonic Acid	4	4	4	4	1	1	4	4	4	4	4	4	4	4	4	4	4	4
Chlorotoluene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Chlorotoluene Sulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Chlorotoluidine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chlorotrifluoroethylene (CTFE)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Chlorox	2	2	1	1	1	1	1	2	4	4	4	2	4	4	4	2	1	X
Chloroxylols	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cholesterol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chrome Alum	1	1	1	1	1	1	1	1	1	4	X	1	1	1	1	1	X	1
Chrome Plating Solutions	4	4	2	1	1	1	1	4	4	4	4	2	4	4	4	4	2	2
Chromic Acid	4	4	2	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Chromic Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chromic Fluorides	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chromic Hydroxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chromic Nitrates	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chromic Oxide	4	4	2	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Chromic Phosphate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chromic Sulfate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Chromium Potassium Sulfate (Alum)	2	X	2	1	1	1	2	X	X	X	X	X	X	X	X	X	X	X
Chromyl Chlorides	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cinnamic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cinnamic Alcohol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cinnamic Aldehyde	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Circo Light Process Oil	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	2	1	4
Citric Acid	1	1	1	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1
City Service #65 #120 #250	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	4	1	4
City Service Koolmoter-AP Gear Oil 140-EP Lube	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	2	1	4
City Service Pacemaker #2	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	4	1	4
Clorox	2	2	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Coal Tar	1	X	X	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cobalt Chloride	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Cobalt Chloride, 2N	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Cobaltous Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Cobaltous Bromide	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Cobaltous Linoleate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cobaltous Naphthenate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cobaltous Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Coconut Oil	1	1	3	1	1	1	2	3	4	1	3	3	4	4	4	3	1	1
Cod Liver Oil	1	1	1	1	1	1	1	2	4	1	1	1	4	4	4	2	1	2
Codeine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Coffee	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Coke Oven Gas	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	2
Coliche Liquors	2	2	2	X	X	X	2	1	2	X	X	2	1	1	1	X	X	X
Convelex 10	4	4	X	X	X	X	X	4	4	X	2	4	4	4	4	4	X	4
Coolanol 20 25R 35R 40& 45A (Monsanto)	1	1	3	1	1	1	2	2	4	4	1	4	4	4	4	2	1	4
Copper Acetate	2	2	1	4	1	1	2	2	4	4	4	1	4	1	1	2	4	4
Copper Ammonium Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Copper Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Copper Chloride	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1
Copper Cyanide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Copper Gluconate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Copper Naphthenate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Copper Nitrate	2	X	2	1	1	1	2	X	X	X	X	X	X	X	X	X	X	X
Copper Oxide	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Copper Salts	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Copper Sulfate	1	1	1	1	1	1	1	1	2	4	1	2	2	2	2	1	1	1
Copper Sulfate 10%	1	1	1	1	1	1	1	1	2	4	2	2	2	2	2	1	1	1
Copper Sulfate 50%	1	1	1	1	1	1	1	1	2	4	3	2	2	2	1	1	1	1
Corn Oil	1	1	3	1	1	1	2	3	4	1	1	3	4	4	4	2	1	1
Cottonseed Oil	1	1	3	1	1	1	2	3	4	1	1	3	4	4	4	2	2	1
Creosote, Coal Tar	1	1	4	1	1	1	2	2	4	1	3	4	4	4	4	4	1	4
Creosote, Wood	1	1	4	1	1	1	2	2	4	1	3	4	4	4	4	4	1	4
Cresol (Methyl Phenol)	X	X	X	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cresols	4	4	4	2	1	1	2	4	4	4	X	4	4	4	4	4	X	4
Cresylic Acid	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	X	4
Crotonaldehyde	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Crotonic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Crude Oil	2	2	4	1	1	1	2	4	4	1	X	4	4	4	4	4	2	4
Cumaldehyde	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cumene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Cumene Hydroperoxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cupric Sulfate	2	X	2	1	1	1	2	X	X	X	X	X	X	X	X	X	X	X
Cutting Oil	1	1	4	1	1	1	2	2	4	1	1	4	4	4	4	2	1	4
Cyanamide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cyanides	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cyanogen Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifi uor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfl uoroelastomer (Paroil uor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Cyanogen Gas	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cyanohydrin	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cyanuric Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cyclohexane	1	1	4	1	1	1	2	3	4	2	1	4	4	4	4	4	1	4
Cyclohexanol	1	1	4	1	1	1	2	2	4	X	X	4	4	4	4	2	1	4
Cyclohexanone	4	4	2	4	1	1	3	4	4	4	4	2	4	4	4	4	4	4
Cyclohexene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cyclohexylamine	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Cyclohexylamine Carbonate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Cyclohexylamine Laurate	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Cyclopentadiene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Cyclopentane	1	1	4	1	1	1	2	3	4	2	1	4	4	4	4	4	1	4
Cyclopolylefins	1	1	4	1	1	1	2	3	4	2	1	4	4	4	4	4	1	4
Cymene or p-Cymene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
DDT (Dichlorodiphenyltrichloroethane)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Decalin	4	4	4	1	1	1	2	4	4	X	X	4	4	4	4	4	1	4
Decane	1	1	4	1	1	1	2	3	4	1	2	4	4	4	4	3	1	2
Delco Brake Fluid	3	3	1	4	1	1	2	2	1	X	X	2	X	X	X	2	4	3
Denatured Alcohol	1	1	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1
Detergent, Water Solution	1	1	1	1	1	1	1	2	2	4	4	1	2	2	2	2	1	1
Developing Fluids (Photo)	1	1	2	1	1	1	1	1	2	X	X	2	2	1	1	1	1	1
Dexron	1	1	4	1	1	1	2	2	4	1	2	4	4	4	4	4	2	4
Dextrin	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Dextro Lactic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dextron	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Dextrose	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
DF200	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DI Water	2	X	1	2	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Diacetone	4	4	1	4	1	1	2	4	4	4	4	1	4	4	4	4	4	4
Diacetone Alcohol	4	4	1	4	1	1	2	2	4	4	4	1	4	4	4	2	4	4
Dialkyl Sulfates	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Diallyl Ether	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Diallyl Phthalate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Diamylamine	1	1	4	1	2	1	X	2	4	1	1	4	4	4	4	2	1	2
Diazinon	3	3	4	2	1	1	2	3	4	X	X	4	4	4	4	3	2	4
Dibenzyl (sym-Diphenylethane)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dibenzyl Ether	4	4	2	4	1	1	2	4	4	X	2	2	4	4	4	4	X	X
Dibenzyl Sebacate	4	4	2	2	1	1	2	4	4	4	2	2	4	4	4	4	3	3
Diborane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Dibromoethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dibromoethyl Benzene	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Dibutyl Cellosolve Adipate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dibutyl Ether	4	4	3	3	1	1	3	4	4	3	2	3	4	4	4	3	4	4

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Dibutyl Methyleneedio Glycolate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dibutyl Phthalate	4	4	2	3	2	1	3	4	4	4	3	3	4	4	4	4	3	2
Dibutyl Sebacate	4	4	2	2	1	1	2	4	4	4	4	2	4	4	4	4	2	2
Dibutyl Thioglycolate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dibutyl Thiourea	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dibutylamine	4	4	1	4	1	1	4	3	4	4	4	4	4	4	4	4	4	3
Dichloroacetic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichloroaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dichlorobenzene or o-Dichlorobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Dichlorobenzene or p-Dichlorobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Dichlorobutane	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Dichlorobutene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichlorodiphenyl-Dichloroethane (DDD)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichloroethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichloroethylene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichlorohydrin	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dichloroisopropyl Ether	4	4	3	3	1	1	3	4	4	3	2	4	4	4	4	4	3	4
Dichloromethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichlorophenol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichlorophenoxyacetic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichloropropane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichloropropene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dichlorosilane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Dicyclohexylamine	1	1	4	4	1	1	4	4	4	4	4	4	4	4	4	4	4	2
Dicyclohexylammonium Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dicyclopentadiene	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Dieldrin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Diesel Oil	1	1	4	1	1	1	2	3	4	1	3	4	4	4	4	3	1	4
Di-ester Lubricant MIL-L-7808	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Di-ester Synthetic Lubricants	2	2	4	1	1	1	2	4	4	2	4	4	4	4	4	4	2	4
Diethanolamine (DEA)	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Diethyl Benzene	X	X	X	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Diethyl Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Diethyl Ether	4	4	4	4	1	1	4	3	4	3	1	4	4	4	4	4	3	4
Diethyl Phthalate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Diethyl Sebacate	2	2	2	2	1	1	2	4	4	4	4	2	4	4	4	4	2	2
Diethyl Sulfate	4	X	1	3	1	1	2	4	X	X	X	X	X	X	X	X	X	2
Diethylamine	2	X	1	4	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Diethylaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Diethylene Glycol	1	1	1	1	1	1	1	1	1	2	4	1	1	1	1	1	1	2
Diethylene Glycol B	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diethylenetriamine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Difi uorodibromomethane	4	4	2	X	1	1	2	4	4	4	4	2	4	4	4	4	X	4

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Diethyl urethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Diethyl uromonochloroethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Diglycol Chloroformate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Diglycolamine	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Diglycolic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dihydroxydiphenylsulfone	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Diisobutyl Ketone	X	X	1	X	2	1	1	X	X	X	X	1	X	X	X	X	X	X
Diisobutylcarbinol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Diisobutylene	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	3	4
Diisooctyl Sebacate	3	3	3	2	1	1	2	4	4	4	4	4	4	4	4	4	3	3
Diisopropyl Ether (DIPE)	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Diisopropyl Ketone	4	4	1	4	2	1	2	4	4	4	4	1	4	4	4	4	4	4
Diisopropylbenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Diisopropylidene Acetone	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dimethoxyethane	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dimethyl Acetamide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	4	2
Dimethylaniline (Xylidine)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dimethyldisulfide (DMDS)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Dimethyl Ether	1	X	2	2	1	1	4	3	X	X	X	X	X	X	X	X	X	X
Dimethyl Formaldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dimethyl Formamide (DMF)	2	2	1	4	1	1	2	3	4	4	4	2	X	X	4	4	4	2
Dimethylhydrazine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dimethyl Phenyl Carbinol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dimethyl Phenyl Methanol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dimethyl Phthalate	4	4	2	2	1	1	2	4	4	4	X	2	4	4	4	4	2	X
Dimethyl Sulfoxide (DMSO)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Dimethyl Terephthalate (DMT)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dimethylamine (DMA)	2	2	1	4	1	1	2	2	2	4	3	2	2	2	2	3	4	2
Dinitrochlorobenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dinitrogen Tetroxide	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Dinitrotoluene (DNT)	4	4	4	4	1	1	4	4	4	4	4	4	4	4	4	4	4	4
Diethyl Phthalate	4	4	2	2	1	1	2	4	4	4	4	2	4	4	4	4	2	3
Diethyl Sebacate	4	4	2	2	1	1	2	4	4	4	2	2	4	4	4	4	3	3
Diethylamine	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Dioxane	4	4	2	4	1	1	3	4	4	4	4	2	4	4	4	4	4	4
Dioxolane	4	4	2	4	1	1	3	4	4	4	4	3	4	4	4	4	4	4
Dipentene	2	2	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Diphenyl	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	4
Diphenyl Oxides	4	4	4	1	1	1	2	4	4	4	4	4	4	4	4	4	2	3
Diphenylamine (DPA)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Diphenylene Oxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Diphenylpropane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Disilane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

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- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Di-Tert-Butyl Peroxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
D-Limonene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dodecylbenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Dow Chemical 50-4	X	X	1	4	3	2	2	2	1	X	X	2	X	X	X	2	4	X
Dow Chemical ET378	4	4	X	X	X	X	X	4	4	3	2	4	4	4	4	4	X	4
Dow Chemical ET588	3	3	1	4	3	2	2	2	1	X	X	2	X	X	X	2	4	X
Dow Corning -11	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Dow Corning 1208 4050 6620 F-60, XF-60	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Dow Corning -1265 Fluorosilicone Fluid	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1
Dow Corning -200	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -220	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Dow Corning -3	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	2
Dow Corning -33	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -4	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	2
Dow Corning -44	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -5	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -510	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -55	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -550	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -704	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -705	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning -710	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Dow Corning F-61	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Dow Guard	1	1	1	1	1	1	X	1	1	3	3	1	1	1	1	1	1	1
Dowanol P Mix	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Dowtherm, 209	3	3	1	4	1	1	X	2	X	X	X	2	X	X	X	X	3	3
Dowtherm, A	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Dowtherm, E	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Drinking Water	1	1	1	1	1	1	X	2	1	4	4	1	1	1	1	1	1	1
Dry Cleaning Fluids	3	3	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
DTE 20 Series, Mobil	2	2	4	1	1	1	2	1	X	2	1	4	X	X	2	2	2	4
DTE named series, Mobil, light-heavy	1	1	4	1	1	1	2	2	4	X	1	4	4	X	3	1	1	3
Elco 28-EP lubricant	1	1	4	1	1	1	X	3	4	1	1	4	4	4	4	4	1	2
Epichlorohydrin	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Epoxy Resins	X	X	1	4	1	1	X	1	X	X	X	1	X	X	X	X	X	X
Erucic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Esam-6 Fluid	X	X	1	4	1	1	X	2	1	X	X	2	X	X	X	2	4	X
Esso Fuel 208	1	1	4	1	1	1	X	2	4	1	4	4	4	4	4	3	1	4
Esso Golden Gasoline	2	2	4	1	1	1	X	4	4	4	4	4	4	4	4	4	1	4
Esso Motor Oil	1	1	4	1	1	1	X	3	4	1	4	4	4	4	4	4	1	4
Esso Transmission Fluid (Type A)	1	1	4	1	1	1	X	2	4	1	3	4	4	4	4	4	1	4
Esso WS2812 (MIL-L-7808A)	1	1	4	1	1	1	X	4	4	2	4	4	4	4	4	4	1	4
Esso XP90-EP Lubricant	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifl uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Esstic 42 43	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	1	4	
Ethane	1	1	4	1	1	1	X	2	4	1	3	4	4	4	4	2	3	4
Ethanol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethanol Amine	2	2	1	4	1	1	X	2	2	4	3	2	2	2	2	3	4	2
Ethers	4	4	3	3	1	1	X	4	4	3	2	4	4	4	4	4	3	4
Ethoxyethyl Acetate (EGMEEA)	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethyl Acetate-Organic Ester	4	4	2	4	2	1	X	4	4	4	4	2	4	4	4	4	4	2
Ethyl Acetoacetate	4	4	2	4	1	1	X	4	3	4	4	2	3	3	3	4	4	2
Ethyl Acrylate	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	2
Ethyl Alcohol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethyl Ammonium Dichloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ethyl Benzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	1	4
Ethyl Benzoate	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	1	4
Ethyl Bromide	2	2	4	1	1	1	X	4	X	X	X	4	4	4	4	4	1	X
Ethyl Cellosolve	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Ethyl Cellulose	2	2	2	4	1	1	X	2	2	4	2	2	2	2	2	2	4	2
Ethyl Chloride	1	1	3	1	1	1	X	4	4	3	2	4	2	1	4	4	1	4
Ethyl Chlorocarbonate	4	4	2	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Ethyl Chloroformate	4	4	2	4	1	1	X	4	4	4	4	3	4	4	4	4	4	4
Ethyl Ether	3	3	3	4	1	1	X	4	4	4	2	3	4	4	4	4	3	4
Ethyl Formate	4	4	2	1	1	1	X	2	4	X	X	2	4	4	4	2	1	X
Ethyl Hexanol	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethyl Lactate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethyl Mercaptan	4	4	X	2	1	1	X	3	4	X	X	4	4	4	4	3	X	3
Ethyl Nitrite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethyl Oxalate	4	4	1	2	1	1	X	4	4	4	X	4	4	1	4	4	2	4
Ethyl Pentachlorobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Ethyl Pyridine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Ethyl Silicate	1	1	1	1	1	1	X	1	2	X	X	1	2	2	2	2	1	X
Ethyl Stearate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Ethyl Sulfate	X	X	1	4	1	1	1	X	X	X	X	X	X	X	X	X	X	X
Ethyl Tertiary Butyl Ether	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Ethyl Valerate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Ethylacrylic Acid	4	4	2	X	X	X	X	2	4	4	4	2	4	4	4	4	4	4
Ethylamine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ethylcyclopentane	1	1	4	1	1	1	X	3	4	2	1	4	4	4	4	4	1	4
Ethylene	3	2	4	2	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Ethylene Chloride	4	4	4	2	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Ethylene Chlorohydrin	4	4	2	1	1	1	X	2	2	4	4	2	2	2	2	2	2	3
Ethylene Cyanohydrin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Ethylene Diamine	1	1	1	4	2	2	X	1	2	4	4	1	2	1	1	2	4	1
Ethylene Dibromide	4	4	3	1	1	1	X	4	4	4	4	3	4	4	4	4	3	4
Ethylene Dichloride	4	4	3	1	1	1	X	4	4	4	4	3	4	4	4	4	3	4

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Ethylene Glycol	1	1	1	1	1	1	X	1	1	4	2	1	1	1	1	1	1	1
Ethylene Hydrochloride	4	4	3	1	1	1	X	4	4	4	4	3	4	4	4	4	3	4
Ethylene Oxide	4	4	3	4	1	1	X	4	4	4	4	3	4	4	4	4	4	4
Ethylene Oxide, -12% and Freon 12 -80%	3	3	2	4	4	2	X	4	4	4	4	2	4	4	4	4	4	4
Ethylene Trichloride	4	4	3	1	1	1	X	4	4	4	4	3	4	4	4	4	3	4
Ethyleneimine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ethylmorpholine Stannous Octotatate (50/50 mixture)	4	4	2	4	1	1	X	X	4	X	X	2	X	X	X	X	X	X
Ethylmorpholine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Ethylsulfuric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
F-60 Fluid (Dow Corning)	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	4
F-61 Fluid (Dow Corning)	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	4
Fatty Acids	2	2	3	1	1	1	X	2	4	X	X	3	4	4	4	2	X	3
FC-43 Heptacosylfluorotri-butylamine	1	1	1	1	1	1	X	1	4	X	X	1	X	X	X	1	1	1
FC75 & FC77 (Fluorocarbon)	1	1	1	2	1	1	X	1	4	X	X	1	X	X	X	1	2	1
Ferric Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferric Ammonium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferric Chloride	1	1	1	1	1	1	X	2	1	1	1	1	1	1	1	2	1	2
Ferric Ferrocyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferric Hydroxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferric Nitrate	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	2
Ferric Persulfate	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Ferric Sulfate	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Ferrous Ammonium Citrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferrous Ammonium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferrous Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferrous Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Ferrous Iodide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferrous Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ferrous Tartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Fish Oil	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Fisher Reagent	X	X	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fluorinated Cyclic Ethers	X	X	1	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Fluorine (Gas)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Fluorine (Liquid)	4	4	4	2	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Fluorobenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Fluoroboric Acid	1	X	1	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Fluorocarbon Oils	X	X	1	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Fluoroform (Trifluoromethane)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Fluorolube	1	1	1	2	1	1	X	1	4	X	X	1	X	X	X	1	2	1
Fluorophosphoric Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Fluorosilicic Acid	1	1	2	2	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Fluorosulfonic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Formaldehyde	3	3	2	4	1	1	X	3	3	4	4	2	2	2	2	2	4	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* Aflas -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Formamide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	3	2
Formic Acid	X	X	1	4	1	1	3	1	X	X	X	X	X	X	X	X	X	X
Freon, 11 (Trichlorofluoromethane)	4	4	4	2	2	2	X	4	4	4	X	4	X	X	4	1	2	4
Freon, 112 (Tetrachlorodifluoroethane)	2	2	4	1	1	1	X	2	4	X	X	4	X	X	4	2	X	4
Freon, 113 (Trichlorotrifluoroethane)	1	1	4	2	4	3	X	1	2	X	1	4	X	X	4	1	X	4
Freon, 113 + High and Low Aniline Oil	1	X	X	X	4	3	4	X	X	X	X	X	X	X	X	X	X	X
Freon, 114 (Dichlorotetrafluoroethane)	1	1	1	1	2	2	X	1	1	X	X	1	X	X	1	X	X	4
Freon, 114B2	2	2	4	2	2	2	X	2	4	X	X	4	X	X	4	1	X	4
Freon, 115 116	1	1	1	2	2	2	X	1	1	X	X	1	X	X	1	X	X	X
Freon, 12 (Dichlorodifluoroethane)	2	2	3	3	2	2	X	1	1	X	1	3	4	4	2	1	3	4
Freon, 12 and ASTM Oil #2 (50/50 Mixture)	2	2	4	1	1	1	X	3	4	X	X	4	4	4	4	2	2	4
Freon, 12 and Suniso 4G (50/50 Mixture)	2	2	4	1	1	1	X	3	4	X	X	4	4	4	4	2	2	4
Freon, 123 (Dichlorotrifluoroethane)	X	X	X	X	4	4	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 124 (Chlorotetrafluoroethane)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 125 (Pentafluoroethane)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 13 (Chlorotrifluoroethane)	1	1	1	1	1	1	X	1	1	X	X	1	X	1	1	1	4	4
Freon, 134a (Tetrafluoroethane)	1	1	1	4	4	3	X	1	X	X	X	X	X	X	X	X	4	4
Freon, 13B1 (Bromotrifluoroethane)	1	1	1	1	2	2	X	1	1	X	X	1	X	X	1	1	2	4
Freon, 14 (Tetrafluoroethane)	1	1	1	1	1	1	X	1	1	X	1	1	X	X	1	1	X	4
Freon, 141b (Dichlorofluoroethane)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 142b (Chlorotrifluoroethane)	2	2	4	2	4	3	4	1	X	X	X	X	X	X	X	X	X	X
Freon, 152a (Difluoroethane)	X	X	X	X	4	3	X	1	X	X	X	X	X	X	X	X	X	X
Freon, 21	4	4	4	4	1	1	X	3	4	X	X	4	4	4	4	4	X	4
Freon, 218	1	X	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 22 (Chlorodifluoromethane)	4	4	3	4	4	4	X	1	1	2	4	3	X	X	1	1	4	4
Freon, 22 and ASTM Oil #2 (50/50 Mixture)	4	4	4	2	1	1	X	2	4	2	X	4	X	X	4	X	2	4
Freon, 23 (Fluoroform) (Trifluoromethane)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 31	4	4	1	4	2	2	X	1	2	X	X	1	X	X	2	2	X	X
Freon, 32	1	1	1	4	2	2	X	1	1	X	X	1	X	X	1	1	X	X
Freon, 356mcf	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 401a	X	4	1	4	X	X	X	1	X	X	X	X	X	X	X	X	X	X
Freon, 402a	X	3	1	4	X	X	X	1	X	X	X	X	X	X	X	X	X	X
Freon, 404a	X	1	1	4	X	X	X	4	X	X	X	X	X	X	X	X	X	X
Freon, 407c	X	2	X	4	X	X	X	4	X	X	X	X	X	X	X	X	X	X
Freon, 410a	X	2	1	4	X	X	X	1	X	X	X	X	X	X	X	X	X	X
Freon, 410c	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Freon, 502	2	2	1	2	2	2	X	1	1	X	X	1	X	X	1	X	X	X
Freon, 507	X	1	1	4	X	X	X	1	X	X	X	X	X	X	X	X	X	X
Freon, BF (R112)	2	2	4	1	2	2	X	2	4	X	X	4	X	X	4	2	X	4
Freon, C316	1	X	1	1	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, C318	1	1	1	2	2	2	X	1	1	X	X	1	X	X	1	1	X	X
Freon, K-142b	1	1	1	4	4	4	X	1	1	X	X	1	X	X	2	1	X	X
Freon, K-152a	1	1	1	4	4	4	X	1	1	X	X	1	X	X	1	4	X	X

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)
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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hilif uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Freon, MF (R11)	2	2	4	2	2	2	X	4	4	X	3	4	X	X	4	1	X	4
Freon, PCA (R113)	1	1	4	2	1	1	X	1	2	X	1	4	X	X	4	1	X	4
Freon, TA	1	X	2	3	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, TC	1	X	2	1	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, TF (R113)	1	1	4	2	2	2	X	1	2	X	1	4	X	X	4	1	X	4
Freon, TMC	2	X	3	1	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, T-P35	1	X	1	1	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Freon, T-WD602	2	X	2	1	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Frick #3 Compressor Oil	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fuel Oil, #6	2	2	4	1	1	1	X	4	4	1	2	4	4	4	4	4	1	1
Fuel Oil, 1 and 2	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	3	1	4
Fuel Oil, Acidic	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	1
Fumaric Acid	1	1	2	1	1	1	X	2	2	4	X	4	2	1	3	2	1	2
Fuming Sulphuric Acid (20/25% Oleum)	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	X	4
Furaldehyde	4	4	2	4	2	2	4	4	X	X	X	X	X	X	X	X	X	X
Furan (Furfuran)	4	4	3	1	1	1	X	4	4	4	X	4	4	4	4	4	X	X
Furfural (Furfuraldehyde)	4	4	2	4	1	1	X	4	4	4	3	2	4	4	4	3	X	4
Furfuraldehyde	4	4	2	4	1	1	X	4	4	4	3	2	4	4	4	3	X	4
Furfuryl Alcohol	4	4	2	X	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Furoic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Furyl Carbinol	4	4	2	X	X	X	X	4	4	4	4	2	4	4	4	4	4	4
Fyrquel 150 220 300 550	4	4	1	1	1	1	X	4	4	4	4	1	4	4	4	4	2	1
Fyrquel 90 100 500	4	4	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X
Fyrquel A60	4	4	2	4	1	1	2	4	X	X	X	X	X	X	X	X	X	X
Fyrquel EHC	3	1	1	1	1	1	1	4	X	4	4	1	X	X	X	X	3	1
Galden	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Gallic Acid	2	2	2	1	1	1	X	2	2	4	4	2	X	1	1	2	1	X
Gasoline	1	1	4	1	1	1	X	4	4	4	2	4	4	4	4	4	1	4
Gelatin	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Germane (Germanium Tetrahydride)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Girling Brake Fluid	3	3	1	4	1	1	X	2	1	X	X	2	X	X	X	2	4	X
Glauber's Salt	4	4	2	1	1	1	X	2	4	4	X	2	4	2	2	2	1	X
Gluconic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glucose	1	1	1	1	1	1	X	1	1	X	4	1	1	1	1	1	1	1
Glue	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Glutamic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glycerine (Glycerol)	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Glycerol Dichlorohydrin	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glycerol Monochlorohydrin	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glycerol Triacetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glycerophosphoric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glyceryl Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glycidol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

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Glycol Monoether	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Glycolic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Glycols	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Glyoxylic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Grease Petroleum Base	1	1	4	1	1	1	X	3	4	1	1	4	4	4	4	4	1	4
Green Sulfate Liquor	2	2	1	1	1	1	X	2	2	4	4	1	2	2	2	2	2	X
Gulf Endurance Oils	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Gulf FR Fluids (Emulsion)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Gulf FR G-Fluids	1	1	1	1	1	1	X	1	1	4	2	1	1	1	1	1	1	1
Gulf FR P-Fluids	4	4	2	2	1	1	X	4	4	4	4	2	4	4	4	4	2	1
Gulf Harmony Oils	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Gulf High Temperature Grease	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Gulf Legion Oils	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Gulf Paramount Oils	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Gulf Security Oils	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Gulf Crown Grease	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Halothane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Halowax Oil	4	4	4	1	1	1	X	4	4	X	X	4	4	4	4	4	1	4
Hannifin Lube A	1	1	4	1	1	1	X	1	2	1	1	4	4	4	4	1	1	2
Heavy Water	1	1	1	X	1	1	X	2	1	4	4	1	1	1	1	1	1	1
HEF-2 (High Energy Fuel)	2	2	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Helium	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Heptachlor	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Heptachlorobutene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Heptaldehyde (Heptanal)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Heptane or n-Heptane	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	2	3	4
Heptanoic Acid	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Hexachloroacetone	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Hexachlorobutadiene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hexachlorobutene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hexachloroethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hexaethyl Tetraphosphate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hexafluoroethane (F-116)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Hexafluoroxylene	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hexafluoroxylene	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hexaldehyde or n-Hexaldehyde	4	4	1	4	1	1	X	1	4	X	2	2	4	4	4	3	4	2
Hexamethyldisilazane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hexamethylene (Cyclohexane)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Hexamethylene Diammonium Adipate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hexamethylenediamine	3	3	1	3	2	2	X	1	1	4	4	1	1	1	1	1	1	2
Hexamethylenetetramine	3	3	1	3	2	2	X	1	1	4	4	1	1	1	1	1	1	2
Hexane or n-Hexane	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	2	3	4
Hexene-1 or n-Hexene-1	2	2	4	1	1	1	X	2	4	1	2	4	4	4	4	2	4	4

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)
 NOTE: *These temperature ranges will apply to the majority of media for which the material is potentially recommended. With some media however, the service temperature range may be significantly different. ALWAYS TEST UNDER ACTUAL SERVICE CONDITIONS.

COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
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- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Hexone (Methyl Isobutyl Ketone)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Hexyl Acetate	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Hexyl Alcohol	1	1	3	1	1	1	X	2	1	4	4	3	1	1	1	2	2	2
Hexylene Glycol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Hexylresorcinol	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
HFC-245fa	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
High Viscosity Lubricant, H2	1	1	1	1	1	1	X	2	1	4	4	1	2	X	X	X	2	1
High Viscosity Lubricant, U4	1	1	1	1	1	1	X	2	1	4	4	1	2	X	X	X	2	1
HiLo MS #1	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	3	3
Houghto-Safe 1010 phosphate ester	4	4	1	1	1	1	X	4	4	4	X	1	4	4	4	4	2	3
Houghto-Safe 1055 phosphate ester	4	4	1	1	1	1	X	4	4	4	X	1	4	4	4	4	2	3
Houghto-Safe 1120 phosphate ester	4	4	2	1	1	1	X	4	4	4	4	1	4	4	4	4	2	3
Houghto-Safe 271 (Water & Glycol Base)	1	1	1	2	1	1	X	2	1	4	4	2	X	X	X	X	2	2
Houghto-Safe 416 & 500 Series	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Houghto-Safe 5040 (Water/Oil emulsion)	1	1	4	1	1	1	X	2	4	4	4	4	4	4	4	4	2	3
Houghto-Safe 620 Water/Glycol	1	1	1	2	1	1	X	2	1	4	4	2	X	X	X	X	2	2
Hydraulic Oil (Petroleum Base, Industrial)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Hydraulic Oils (Synthetic Base)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hydrazine	2	2	1	4	1	1	X	2	2	X	4	1	X	X	1	2	4	2
Hydrazine (Anhydrous)	4	4	2	4	1	1	2	2	1	4	4	2	4	4	4	2	4	X
Hydrazine Dihydrochloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Hydrazine Hydrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Hydriodic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hydroabietyl Alcohol	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrobromic Acid	4	4	1	1	1	1	X	4	4	4	4	1	4	1	1	1	3	4
Hydrobromic Acid 40%	4	4	1	1	1	1	X	2	4	4	4	1	4	1	1	1	3	4
Hydrocarbons, Saturated	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	3	1	4
Hydrochloric Acid (cold) 37%	4	X	3	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Hydrochloric Acid (hot) 37%	4	X	3	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hydrochloric Acid, 3 Molar to 158°F	2	2	1	1	1	1	X	2	3	3	4	1	X	X	3	1	3	4
Hydrochloric Acid, Concentrated Room Temp.	2	2	2	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrochloric Acid, Concentrated to 158°F	4	4	4	1	1	1	X	4	4	4	4	4	X	X	4	X	4	4
Hydrocyanic Acid	2	2	1	1	1	1	X	2	2	4	X	1	2	1	1	1	2	3
Hydro-Drive MIH-10 (Petroleum Base)	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	2
Hydro-Drive MIH-50 (Petroleum Base)	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	2
Hydrofluoric Acid (Anhydrous)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrofluoric Acid (conc.) Cold	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrofluoric Acid (conc.) Hot	4	X	4	3	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrofluorosilicic Acid	2	2	1	1	1	1	X	2	2	X	X	1	X	1	1	1	4	4
Hydrogen Bromide (Anhydrous)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrogen Chloride (Anhydrous)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrogen Chloride gas	4	X	1	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Hydrogen Cyanide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Hydrogen Fluoride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrogen Fluoride (Anhydrous)	4	4	1	4	1	1	2	X	4	4	X	1	4	4	4	X	4	X
Hydrogen Gas, Cold	1	1	1	1	1	1	X	1	2	2	1	1	1	1	2	1	3	3
Hydrogen Gas, Hot	1	1	1	1	1	1	X	1	2	2	1	1	1	1	2	1	3	3
Hydrogen Iodide (Anhydrous)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrogen Peroxide	2	2	1	1	1	1	X	1	2	4	X	1	2	2	2	2	1	1
Hydrogen Peroxide 90%	4	4	3	1	1	1	X	4	4	4	X	3	4	4	4	3	2	2
Hydrogen Selenide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Hydrogen Sulfide, Dry, Cold	1	1	1	4	1	1	X	1	1	4	X	1	1	1	1	1	3	3
Hydrogen Sulfide, Dry, Hot	4	4	1	4	1	1	X	2	4	4	X	1	4	4	4	3	3	3
Hydrogen Sulfide, Wet, Cold	4	4	1	4	1	1	X	1	4	4	X	1	4	4	4	2	3	3
Hydrogen Sulfide, Wet, Hot	4	4	1	4	1	1	X	2	4	4	X	1	4	4	4	3	3	3
Hydrolube-Water/Ethylene Glycol	1	1	1	1	1	1	X	2	1	4	4	2	X	X	X	X	2	2
Hydroxycitronellal	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Hydroquinol	4	4	4	1	2	2	X	4	X	X	X	X	X	X	X	X	X	X
Hydroquinone	3	3	2	2	1	1	X	4	4	4	X	4	4	2	2	4	2	X
Hydroxyacetic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Hydrene	2	2	1	4	1	1	X	2	2	4	X	2	2	2	2	X	4	4
Hyjet	4	4	1	4	1	1	2	4	X	X	X	X	X	X	X	X	X	X
Hyjet IV and IVA	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Hyjet S4	4	X	1	4	1	1	2	4	X	X	X	X	X	X	X	X	X	X
Hyjet W	4	4	1	4	1	1	2	4	X	X	X	X	X	X	X	X	X	X
Hypochlorous Acid	4	4	2	1	1	1	X	4	4	4	X	2	4	2	2	1	X	X
Indole	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Industron FF44	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Industron FF48	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Industron FF53	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Industron FF80	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Insulin	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Iodic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Iodine	2	2	2	1	1	1	X	4	2	X	X	2	X	4	X	2	1	X
Iodine Pentafluoride	4	4	4	4	2	2	X	4	4	4	4	4	4	4	4	4	4	4
Iodoform	X	X	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Isoamyl Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Isoamyl Butyrate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Isoamyl Valerate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Isoboreol	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Isobutane	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Isobutyl Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Isobutyl Alcohol	2	2	1	1	1	1	X	1	2	4	4	1	2	1	1	1	2	1
Isobutyl Chloride	4	4	4	1	1	1	4	4	X	X	X	X	X	X	X	X	X	X
Isobutyl Ether	2	2	4	4	2	1	4	3	X	X	X	X	X	X	X	X	X	X
Isobutyl Methyl Ketone	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Isobutyl n-Butyrate	4	4	1	1	1	1	X	4	4	4	X	1	4	4	4	4	1	X
Isobutyl Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Isobutylene	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Isobutyraldehyde	3	2	2	4	2	2	4	3	X	X	X	X	X	X	X	X	X	X
Isobutyric Acid	1	1	2	4	1	1	3	4	X	X	X	X	X	X	X	X	X	2
Isocrotyl Chloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Isodecanol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Isododecane	1	1	4	1	1	1	X	2	4	4	X	4	4	4	4	2	1	4
Isoeugenol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Isooctane	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	1	1	4
Isopar K	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Isopentane	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Isophorone (Ketone)	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Isopropanol	2	2	1	1	1	1	X	2	2	4	4	1	2	1	1	1	2	1
Isopropyl Acetate	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	2	4
Isopropyl Alcohol	2	2	1	1	1	1	X	2	2	4	4	1	2	1	1	1	2	1
Isopropyl Chloride	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Isopropyl Ether	2	2	4	4	1	1	X	3	4	3	2	4	4	4	4	3	3	4
Isopropylacetone	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Isopropylamine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Jet Fuel A	2	2	4	1	1	1	2	4	4	4	3	4	4	4	4	4	2	X
JP-10	3	3	4	1	1	1	2	4	4	4	3	4	X	X	4	X	1	4
JP-3 (MIL-J-5624)	1	1	4	1	1	1	2	4	X	X	X	X	X	X	X	X	X	X
JP-4 (MIL-T-5624) (Jet A1)	1	1	4	1	1	1	2	4	4	2	2	4	4	4	4	4	2	4
JP-5 (MIL-T-5624)	1	1	4	1	1	1	2	4	4	2	2	4	4	4	4	4	2	4
JP-6 (MIL-J-25656)	1	1	4	1	1	1	2	4	4	2	2	4	4	4	4	4	2	4
JP-8 (MIL-T-83133) (Jet A)	1	1	4	1	1	1	2	3	4	1	1	4	X	X	4	X	2	4
JP-9 (MIL-F-81912)	3	3	4	1	1	1	2	4	4	4	3	4	X	X	4	X	2	4
JP-9 -11	4	4	4	1	1	1	2	4	4	4	4	4	X	X	4	X	2	4
JPX (MIL-F-25604)	1	1	4	4	1	1	2	2	X	X	X	X	X	X	X	X	X	X
Karl Fischer Reagent	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Kel F Liquids	1	1	1	2	1	1	X	X	1	X	X	1	X	X	X	1	2	1
Kerosene (Similar to RP-1 and JP-1)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Keystone #87HX-Grease	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	4
Lacquer Solvents	4	4	4	4	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Lacquers	4	4	4	4	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Lactams-Amino Acids	4	4	2	4	1	1	X	2	4	X	X	2	4	4	4	2	4	X
Lactic Acid, Cold	1	1	1	1	1	1	X	1	1	4	X	1	1	1	1	1	1	1
Lactic Acid, Hot	4	4	4	1	1	1	X	4	4	4	X	4	4	4	4	3	2	2
Lactones (Cyclic Esters)	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	2
Lard Animal Fat	1	1	2	1	1	1	X	2	4	1	1	2	4	4	4	4	1	2
Lauric Acid	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Lavender Oil	2	2	4	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X

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LB 135	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Lead (Molten)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Lead Acetate	2	2	1	4	1	1	X	2	4	4	4	1	4	1	1	4	4	4
Lead Arsenate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Azide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Lead Bromide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Chromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Dioxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Linoleate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Naphthenate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Lead Nitrate	1	1	1	X	1	1	X	1	1	X	X	1	1	1	1	1	1	2
Lead Oxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lead Sulfamate	2	2	1	1	1	1	X	1	2	4	X	1	2	2	2	1	1	2
Lehigh X1169	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Lehigh X1170	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Light Grease	1	1	4	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Ligroin (Petroleum Ether or Benzene)	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	3	1	4
Lime Bleach	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Lime Sulfur	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Lindol, Hydraulic Fluid (Phosphate ester type)	4	4	1	2	1	1	X	4	4	4	4	1	4	4	4	4	3	3
Linoleic Acid	2	2	4	2	1	1	X	2	4	X	X	4	4	4	4	2	X	2
Linseed Oil	1	1	3	1	1	1	X	3	4	1	2	3	4	4	4	2	1	1
Liquid Oxygen (LOX)	4	4	4	4	3	2	X	4	4	4	4	4	4	4	4	4	4	4
Liquid Petroleum Gas (LPG)	1	1	4	1	1	1	X	2	4	3	1	4	4	4	4	4	1	3
Liquimoly	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Lithium Bromide (Brine)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Citrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Hydroxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Hypochlorite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Nitrite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Perchlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithium Salicylate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lithopone	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Lubricating Oils (Crude & Refined)	2	2	4	1	1	1	1	3	X	X	X	X	X	X	X	X	X	X
Lubricating Oils (Synthetic base)	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Lubricating Oils, Di-ester	2	2	4	1	1	1	X	3	4	2	X	4	4	4	4	X	2	4
Lubricating Oils, petroleum base	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Lubricating Oils, SAE 10 20 30 40 50	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)
 NOTE: *These temperature ranges will apply to the majority of media for which the material is potentially recommended. With some media however, the service temperature range may be significantly different. ALWAYS TEST UNDER ACTUAL SERVICE CONDITIONS.

COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
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- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Lye Solutions	2	2	1	2	1	1	X	2	2	4	4	1	2	2	1	1	2	2
Magnesium Chloride	1	1	1	1	1	1	X	1	1	X	1	1	1	1	1	1	1	1
Magnesium Hydroxide	2	2	1	1	1	1	X	2	2	4	4	1	2	2	2	1	X	X
Magnesium Salts	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Magnesium Sulfite and Sulfate	1	1	1	1	1	1	X	1	2	4	X	1	2	2	2	1	1	1
Magnesium Trisilicate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Malathion	2	2	4	1	1	1	X	X	4	X	X	4	4	4	4	X	2	4
Maleic Acid	4	4	4	1	1	1	X	4	4	4	X	4	4	4	4	4	X	X
Maleic Anhydride	4	4	2	4	1	1	X	4	4	4	X	2	4	4	4	4	X	X
Maleic Hydrazide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Malic Acid	1	1	2	1	1	1	X	2	2	4	X	4	2	1	3	2	1	2
Mandelic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Dioxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Gluconate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Hypophosphite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Linoleate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Naphthenate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Manganese Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganese Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganous Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganous Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Manganous Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mannitol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
MCS 312	4	4	4	1	1	1	X	4	4	4	X	4	4	4	4	X	1	1
MCS 352	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	3	3
MCS 463	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	3	3
MDI (Methylene di-p-phenylene isocyanate)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercaptan	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Mercaptobenzothiazole (MBT)	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Mercuric Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercuric Chloride	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	X	X
Mercuric Cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercuric Iodide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercuric Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercuric Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercuric Sulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercurous Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercury	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	X	X
Mercury Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercury Fulminate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Mercury Salts	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mercury Vapors	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	X	X
Mesityl Oxide (Ketone)	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Meta-Cresol	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Metalddehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Meta-Nitroaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Meta-Toluidine	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methacrylic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methallyl Chloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methane	1	1	4	1	1	1	X	2	4	1	3	4	4	4	4	2	3	4
Methanol	4	4	1	4	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Methoxychlor	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Methoxyethanol (DGMMA)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Abietate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl Acetate	4	4	2	4	2	1	X	2	4	4	4	2	4	4	4	4	4	4
Methyl Acetoacetate	4	4	2	4	1	1	X	4	X	4	4	2	X	X	X	4	4	2
Methyl Acetophenone*	X	X	X	1	2	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl Acrylate	4	4	2	4	1	1	X	2	4	4	4	2	4	4	4	4	4	4
Methyl Alcohol	4	4	1	4	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Methyl Amylketone	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Anthranilate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl Benzoate	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	1	4
Methyl Bromide	2	2	4	1	1	1	X	4	4	3	X	4	4	4	4	4	1	X
Methyl Butyl Ketone	4	4	1	4	2	1	X	4	4	4	4	1	4	4	4	4	4	4
Methyl Butyrate Cellosolve	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Butyrate Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Carbonate	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Methyl Cellosolve	3	3	2	4	1	1	X	3	4	4	4	2	4	4	4	2	4	4
Methyl Cellulose	2	2	2	4	1	1	X	2	2	4	2	2	2	2	2	2	4	2
Methyl Chloride	4	4	3	1	1	1	X	4	4	4	4	3	4	4	4	4	2	4
Methyl Chloroacetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Chloroform	4	4	4	1	1	1	4	4	X	X	X	X	X	X	X	X	X	X
Methyl Chloroformate	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Methyl Chlorosilanes	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Methyl Cyanide (Acetonitrile)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Cyclohexanone	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Methyl Dichloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyldiethanolamine	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Methyl Ether	1	1	4	1	2	1	X	3	4	4	X	4	1	1	4	4	1	1
Methyl Ethyl Ketone (MEK)	4	4	1	4	2	1	X	4	4	4	4	1	4	4	4	4	4	4
Methyl Ethyl Ketone Peroxide	4	4	4	4	1	1	X	4	4	4	4	4	4	4	4	4	4	2
Methyl Ethyl Oleate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl Formate	4	4	2	X	1	1	X	2	4	X	X	2	4	4	4	2	X	X

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Methyl Hexyl Ketone (2-Octanone)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Iodide	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Methyl Isobutyl Ketone (MIBK)	4	4	3	4	1	1	X	4	4	4	4	3	4	4	4	4	4	4
Methyl Isocyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Isopropyl Ketone	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Methyl Isovalerate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl Lactate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methyl Mercaptan	X	X	1	X	1	1	X	X	X	X	X	1	X	X	X	X	X	X
Methyl Methacrylate	4	X	4	4	1	1	X	4	4	4	X	4	4	4	4	4	4	4
Methyl Oleate	4	4	2	1	1	1	X	4	4	X	X	2	4	X	4	4	2	X
Methyl Pentadiene	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl Phenylacetate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methylphenyl Carbinol	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Methyl Salicylate	4	4	2	X	1	1	X	4	3	X	X	2	X	X	3	4	X	X
Methyl Tertiary Butyl Ether (MTBE)	3	3	3	3	2	1	2	3	X	X	X	X	X	X	X	X	X	X
Methyl Valerate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methyl-2-Pyrrolidone or n-Methyl-2-Pyrrolidone	X	X	2	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Methylacrylic Acid	4	4	2	3	1	1	X	2	4	4	4	2	4	4	4	4	4	4
Methylal	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Methylamine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methylamyl Acetate	3	3	1	3	2	1	X	1	1	4	4	1	1	1	1	1	1	2
Methylcyclopentane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Methylene Bromide	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methylene Chloride	4	4	4	2	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Methylene Iodide	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methylglycerol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Methylisobutyl Carbinol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Methylpyrrolidine	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methylpyrrolidone	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Methylsulfuric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
MIL-A-6091	2	2	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
MIL-C-4339	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	3
MIL-C-7024	1	1	4	1	1	1	X	2	4	2	1	4	4	4	4	4	1	4
MIL-C-8188	2	2	4	2	1	1	X	4	4	3	4	4	4	4	4	4	2	4
MIL-E-9500	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
MIL-F-16884	1	1	4	1	1	1	X	3	4	1	3	4	4	4	4	3	1	4
MIL-F-17111	1	1	4	1	1	1	X	2	4	1	3	4	4	4	4	2	2	4
MIL-F-25558 (RJ-1)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
MIL-F-25656	1	1	4	1	1	1	X	4	4	2	2	4	4	4	4	4	2	4
MIL-F-5566	2	2	1	1	1	1	X	2	2	4	2	1	2	1	1	1	1	1
MIL-F-81912 (JP-9)	3	3	4	1	1	1	X	4	4	4	3	4	X	X	4	X	2	4
MIL-F-82522 (RJ-4)	2	2	4	1	1	1	X	4	4	1	1	4	1	1	1	X	1	4
MIL-G-10924	1	1	4	1	1	1	X	2	4	2	1	4	4	4	4	2	1	4

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifi uor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfl uoroelastomer (Paroil uor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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- 1 - Satisfactory
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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
MIL-G-15793	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	2	4
MIL-G-21568	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	4
MIL-G-23827	1	X	4	1	1	1	X	3	X	3	3	3	X	X	X	X	1	4
MIL-G-25013	1	1	1	1	1	1	X	2	1	1	3	1	4	4	2	2	1	4
MIL-G-25537	1	1	4	1	1	1	X	2	4	2	1	4	4	4	4	2	1	4
MIL-G-25760	2	2	4	1	1	1	X	2	4	2	2	4	4	4	4	2	2	4
MIL-G-3278	2	2	4	1	1	1	X	4	4	1	2	4	4	4	4	4	2	4
MIL-G-3545	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
MIL-G-4343	2	2	3	1	1	1	X	2	1	1	1	3	1	1	1	1	1	3
MIL-G-5572	1	1	4	1	1	1	X	4	4	2	2	4	4	4	4	4	1	4
MIL-G-7118	2	2	4	1	1	1	X	2	4	3	3	4	4	4	4	2	1	4
MIL-G-7187	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	4
MIL-G-7421	2	2	4	1	1	1	X	2	4	4	2	4	4	4	4	2	2	4
MIL-G-7711	1	1	4	1	1	1	X	4	4	2	1	4	4	4	4	4	1	2
MIL-H-13910	1	1	1	1	1	1	X	1	1	2	4	1	1	1	1	1	2	4
MIL-H-19457	4	4	2	1	1	1	X	4	4	4	4	1	4	4	4	4	4	3
MIL-H-22072	1	X	1	2	1	1	X	2	X	X	4	4	X	X	X	X	2	2
MIL-H-22251	2	2	1	X	X	X	X	2	2	X	X	1	X	X	X	2	X	4
MIL-H-27601	1	1	4	1	1	1	X	2	4	1	3	4	4	4	4	3	2	4
MIL-H-46170 -15°F to +400°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-H-46170 -20°F to +275°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-H-46170 -55°F to +275°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-H-46170 -65°F to +275°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-H-5606 -65°F to +235°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-H-5606 -65°F to +275°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-H-6083	1	1	4	1	1	1	X	1	4	1	1	4	4	4	2	2	1	4
MIL-H-7083	1	1	1	2	1	1	X	2	2	4	4	1	3	3	2	2	1	1
MIL-H-81019	1	X	4	1	1	1	X	2	X	1	2	4	X	X	X	X	1	3
MIL-H-8446 (MLO-8515)	2	2	4	1	1	1	X	1	4	3	4	4	4	4	4	X	1	4
MIL-J-5161	2	2	4	1	1	1	X	4	4	1	2	4	4	4	4	4	1	4
Milk	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
MIL-L-15016	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	2	4
MIL-L-15017	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	2	4
MIL-L-17331	1	1	4	1	1	1	X	X	4	X	X	4	4	4	4	X	X	4
MIL-L-2104	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	3	1	4
MIL-L-21260	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
MIL-L-23699	2	2	4	1	1	1	X	3	4	3	3	4	4	4	4	3	2	4
MIL-L-25681	2	2	1	1	1	1	X	2	2	2	3	1	2	2	2	2	2	4
MIL-L-3150	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
MIL-L-6081	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
MIL-L-6082	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	3
MIL-L-6085	2	2	4	1	1	1	X	4	4	2	3	4	4	4	4	4	2	4
MIL-L-6387	2	2	4	1	1	1	X	4	4	2	1	4	4	4	4	4	2	4

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
MIL-L-7808	2	2	4	1	1	1	X	4	4	2	4	4	4	4	4	2	4	
MIL-L-7870	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	1	4	
MIL-L-9000	1	1	4	1	1	1	X	2	4	1	3	4	4	4	2	2	4	
MIL-L-9236	2	2	4	1	1	1	X	4	4	2	2	4	4	4	4	2	4	
MIL-O-3503	1	1	4	1	1	1	X	2	4	2	1	4	4	4	2	1	4	
MIL-P-27402	2	2	1	X	X	X	X	2	2	X	X	1	X	X	X	2	X	4
MIL-PRF-17672	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MIL-PRF-2105	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MIL-PRF-81322	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	X	1	3
MIL-PRF-87252	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MIL-R-25576 (RP-1)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
MIL-S-3136, Type I Fuel	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
MIL-S-3136, Type II Fuel	2	2	4	1	1	1	X	4	4	3	2	4	4	4	4	2	4	4
MIL-S-3136, Type III Fuel	2	2	4	1	1	1	X	4	4	3	2	4	4	4	4	2	4	4
MIL-S-3136, Type IV Oil High Swell	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	2
MIL-S-3136, Type IV Oil Low Swell	1	1	4	1	1	1	X	1	4	1	1	4	4	4	4	1	1	3
MIL-S-3136, Type V Oil Medium Swell	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
MIL-S-81087	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
MIL-T-5624, JP-4, JP-5	1	1	4	1	1	1	X	4	4	2	2	4	4	4	4	4	2	4
MIL-T-83133	1	1	4	1	1	1	X	3	4	1	1	4	X	X	4	X	2	4
Mineral Oils	1	1	3	1	1	1	X	2	4	1	1	3	4	4	4	2	1	2
Mixed Acids	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
MLO-7277 Hydr.	3	3	4	1	1	1	X	4	4	3	3	4	4	4	4	4	3	4
MLO-7557	3	3	4	1	1	1	X	4	4	3	3	4	4	4	4	4	3	4
MLO-8200 Hydr.	2	2	4	1	1	1	X	1	4	X	1	4	4	4	4	2	4	4
MLO-8515	2	2	4	1	1	1	X	1	4	3	1	4	4	4	4	3	1	4
Mobil DTE 20 Series	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Mobil 254 Lubricant	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Mobil Delvac 1100 1110 1120 1130	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Mobil HF	1	1	4	1	1	1	X	2	X	X	X	X	X	X	X	X	X	X
Mobil Nivac 20 30	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Mobil SHC 500 Series	3	3	4	1	1	1	X	2	X	1	2	4	X	X	X	2	2	2
Mobil SHC 600 Series	3	3	4	1	1	1	X	2	4	1	1	4	X	X	X	2	2	3
Mobil Therm 600	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Mobil Velocite c	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Mobilgas WA200 ATF	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Mobilgear 600 Series	3	3	3	1	1	1	X	1	4	1	2	3	3	4	4	2	1	1
Mobilgear SHC ISO Series	3	3	3	1	1	1	X	2	4	1	2	3	3	4	4	2	1	1
Mobilgrease HP	2	2	4	1	1	1	X	2	4	1	1	4	X	4	4	3	1	2
Mobilgrease HTS	2	2	4	1	1	1	X	2	4	1	1	4	X	4	4	3	1	2
Mobilgrease SM	2	2	4	1	1	1	X	2	4	1	1	4	X	4	4	3	1	2
Mobilith AW Series	2	2	4	1	1	1	X	2	4	1	1	4	X	4	4	3	1	2
Mobilith SHC Series	2	2	4	1	1	1	X	3	4	1	1	4	X	4	4	3	1	2

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Mobiljet 291	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mobiljet II Lubricant	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Mobilmistube Series	3	3	3	1	1	1	X	1	4	1	2	3	3	4	4	2	1	1
Mobiloi SAE 20	1	1	4	1	1	1	1	2	4	1	1	4	4	4	4	X	1	X
Mobilux	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Molybdenum Disulfide Grease	1	X	4	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Molybdenum Oxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Molybdenum Trioxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Molybdic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Monobromobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Monobromotoluene	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Monobutyl Paracresol	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Monochloroacetic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Monochlorobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Monochlorobutene	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Monochlorohydrin	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Monoethanolamine (MEA)	4	4	2	4	2	1	X	4	2	4	4	2	2	2	2	4	4	2
Monoethyl Amine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Monoisopropylamine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Monomethyl Aniline	4	X	1	2	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Monomethyl Ether (Dimethyl Ether)	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Monomethyl Ether (Methyl Ether)	1	X	4	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Monomethyl Hydrazine	2	2	1	X	1	1	X	2	2	X	X	1	X	X	X	2	X	4
Monomethylamine (MMA)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Monomethylaniline	4	4	2	2	1	1	X	4	4	4	4	2	4	4	4	4	X	X
Mononitrotoluene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Mononitrotoluene & Dinitrotoluene (40/60 Mixture)	4	4	1	3	2	2	X	4	4	4	4	4	4	4	4	4	3	4
Monovinyl Acetylene	1	1	1	1	1	1	X	2	2	X	X	1	2	2	2	2	X	2
Mopar Brake Fluid	3	3	1	4	1	1	X	2	1	X	X	2	X	X	X	2	4	3
Morpholine	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Motor Oils	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Mustard Gas	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Myristic Acid	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Naphthalene	4	4	4	1	1	1	X	4	4	X	2	4	4	4	4	4	1	4
Naphthalene Chloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Naphthalene Sulfonic Acid	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Naphthalenic Acid	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Naphthalonic Acid	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Naphthenic Acid	2	2	4	1	1	1	X	4	4	X	X	4	4	4	4	4	1	4
Naphthylamine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Naptha	2	2	4	1	1	1	X	4	4	2	2	4	4	4	4	4	2	4
Natural Gas	1	1	4	1	1	1	X	1	2	2	2	4	2	2	2	1	3	4
Neatsfoot Oil	1	1	2	1	1	1	X	4	4	1	1	2	4	4	4	4	1	2

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Neon	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Neville Acid	4	4	2	1	1	1	X	4	4	4	X	2	4	4	4	4	2	4
Nickel Acetate	2	2	1	4	1	1	X	2	4	4	4	1	4	1	1	4	4	4
Nickel Ammonium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nickel Chloride	1	1	1	1	1	1	X	2	1	3	3	1	1	1	1	1	1	1
Nickel Cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nickel Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nickel Salts	1	1	1	1	1	1	X	2	1	3	3	1	1	1	1	1	1	1
Nickel Sulfate	1	1	1	1	1	1	X	1	2	4	3	1	2	2	2	1	1	1
Nicotinamide (Niacinamide)	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Nicotinamide Hydrochloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nicotine	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Nicotine Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Niter Cake	1	1	1	1	1	1	X	1	1	4	1	1	1	1	1	1	1	1
Nitric Acid, Red Fuming	4	4	4	2	1	1	3	4	X	X	X	X	X	X	X	X	X	X
Nitric Acid, White Fuming	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Nitric Acid (0 - 50%)	4	X	2	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Nitric Acid (50 - 100%)	4	X	4	3	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Nitric Acid 3 Molar to 158°F	4	4	2	3	2	2	X	4	3	4	4	2	X	X	X	2	4	4
Nitric Acid Concentrated Room Temp.	X	X	4	2	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Nitric Acid Concentrated to 158°F	4	4	4	4	3	2	X	4	4	4	4	4	X	X	4	X	4	4
Nitric Oxide	3	X	3	3	X	X	X	3	X	X	4	4	X	X	X	X	X	4
Nitroaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrobenzene	4	4	1	2	1	1	X	4	4	4	4	1	4	4	4	4	4	4
Nitrobenzoic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrocellulose	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrochlorobenzene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrochloroform	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrodiethylaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrodiphenyl Ether	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Nitroethane	4	4	2	4	1	1	X	2	2	4	4	2	2	2	2	2	4	4
Nitrofluorobenzene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrogen	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Nitrogen Dioxide	3	3	1	4	1	1	X	1	X	4	3	2	X	X	X	X	1	2
Nitrogen Oxides	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrogen Tetroxide (N2O4)	4	3	4	4	2	2	X	4	4	4	4	3	4	4	4	4	4	4
Nitrogen Trifluoride	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Nitroglycerine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitroglycerol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitroisopropylbenzene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitromethane	4	4	2	4	1	1	X	3	3	4	4	2	2	2	2	2	4	4
Nitrophenol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitropropane	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Nitrosyl Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Nitrosylsulfuric Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Nitrothiophene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrotoluene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrous Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Nitrous Oxide	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X	1
Nonane	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Nonylphenoxy Polyethoxy Ethanol	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Noryl GE Phenolic	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nyvac FR200 Mobil	1	1	1	1	1	1	X	2	4	X	X	4	4	X	4	3	X	X
Octachloro Toluene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Octadecane	1	1	4	1	1	1	X	2	4	2	1	4	4	4	4	2	1	4
Octanal (n-Octanaldehyde)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Octane or n-Octane	1	1	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Octyl Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Octyl Alcohol	2	2	3	1	1	1	X	2	2	4	4	2	2	2	2	2	2	2
Octyl Chloride	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Octyl Phthalate	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Olefins	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Oleic Acid	3	3	4	2	1	1	X	4	4	4	2	4	4	4	4	4	X	4
Oleum (Fuming Sulfuric Acid)	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	X	4
Oleum Spirits	2	2	4	1	1	1	X	3	4	X	3	4	4	4	4	2	2	4
Oleyl Alcohol	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Olive Oil	1	1	2	1	1	1	X	2	4	1	1	2	4	4	4	2	1	3
Oronite 8200	2	2	4	1	1	1	X	1	4	X	1	4	4	4	4	4	1	4
Oronite 8515	2	2	4	1	1	1	X	1	4	X	1	4	4	4	4	4	1	4
Ortho-Chloro Ethyl Benzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Ortho-Chloroaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ortho-Chlorophenol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ortho-Cresol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Ortho-Dichlorobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Ortho-Nitrotoluene	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Orthophos Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
OS 45 Type III (OS45)	2	2	4	1	1	1	X	1	4	X	4	4	4	4	4	2	2	4
OS 45 Type IV (OS45-1)	2	2	4	1	1	1	X	1	4	X	4	4	4	4	4	2	2	4
OS 70	2	2	4	1	1	1	X	1	4	X	4	4	4	4	4	2	2	4
Oxalic Acid	2	2	1	1	1	1	X	2	2	X	X	1	2	2	2	2	1	2
Oxygen, 200°-300°F (Evaluate for specific applications)	4	4	4	2	1	1	1	3	4	1	X	1	X	X	4	X	1	1
Oxygen, 300°-400°F (Evaluate for specific applications)	4	4	4	2	1	1	X	4	4	4	4	4	4	4	4	4	4	1
Oxygen, Cold (Evaluate for specific applications)	2	2	1	1	1	1	X	1	2	2	1	1	2	2	2	1	1	1
Oxygen, Liquid	4	4	4	4	3	2	4	4	X	X	X	X	X	X	X	X	X	X
Ozonated Deionized Water	3	3	1	3	2	2	X	1	1	4	4	1	1	1	1	1	1	2
Ozone	4	2	1	1	1	1	X	2	4	2	1	2	4	4	4	1	1	1

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PAG Compressor Oil	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Paint Thinner, Duco	4	4	4	2	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Palmitic Acid	1	1	2	1	1	1	X	2	2	X	1	2	2	2	2	3	1	4
PAO	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Para-Aminobenzoic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Para-Aminosalicylic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Para-Bromobenzylphenyl Ether	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Para-Chlorophenol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Paracymene	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Para-Dichlorobenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Paraffins	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Para-Formaldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Paraldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Par-al-Ketone	4	4	4	4	X	X	X	4	4	4	4	4	4	4	4	4	4	4
Para-Nitroaniline	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Para-Nitrobenzoic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Para-Nitrophenol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Parathion	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Para-Toluene Sulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Paraxylene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Parker O Lube	1	1	4	1	1	1	X	1	2	1	1	4	4	4	4	1	1	2
Peanut Oil	1	1	3	1	1	1	X	3	4	1	2	3	4	4	4	2	1	1
Pectin (Liquor)	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Pelagonic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Penicillin (Liquid)	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Pentachloroethane	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Pentachlorophenol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pentaerythritol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pentaerythritol Tetranitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pentafl uoroethane (F-125)	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Pentane or n-Pentane	1	1	4	1	1	1	X	1	3	1	4	4	4	4	4	2	3	4
Pentane, 2 Methyl	1	1	4	1	1	1	X	2	4	1	4	4	4	4	4	2	3	4
Pentane, O2-apr dimethyl	1	1	4	1	1	1	X	2	4	1	4	4	4	4	4	2	3	4
Pentane, 3-Methyl	1	1	4	1	1	1	X	2	4	1	4	4	4	4	4	2	3	4
Pentoxone	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Pentyl Pentanoate	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Peracetic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Perchloric Acid - 2N	4	4	1	1	1	1	X	2	4	4	4	2	4	4	4	2	1	2
Perchloroethylene	2	2	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Perfl uoropropane	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Perfl uorotriethylamine	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Permanganic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Persulfuric Acid (Caro's Acid)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifi uor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfl uoroelastomer (Paroil uor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
- 3 - Doubtful (sometimes OK for static seal)
- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Petrolatum	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Petrolatum Ether	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Petroleum Oil, Above 250°F	4	4	4	2	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Petroleum Oil, Below 250°F	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	2	2
Petroleum Oil, Crude	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Phenol	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Phenol, 70% / 30% H2O	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Phenol, 85% / 15% H2O	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Phenolic Sulfonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phenolsulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phenylacetamide	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Phenylacetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phenylacetic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phenylbenzene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Phenylene Diamine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phenylethyl Alcohol	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Phenylethyl Ether	4	4	4	4	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Phenylethyl Malonic Ester*	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Phenylglycerine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phenylhydrazine	4	4	2	1	1	1	X	4	2	4	X	4	2	1	1	4	X	X
Phenylhydrazine Hydrochloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phenylmercuric Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phorone	4	4	3	4	1	1	X	4	4	4	4	3	4	4	4	4	4	4
Phosgene	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phosphine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phosphoric Acid 3 Molar to 158°F	1	1	1	1	1	1	X	2	2	3	4	1	X	X	X	1	2	2
Phosphoric Acid Concentrated Room Temp	2	2	1	1	1	1	X	2	1	2	4	1	X	X	X	1	3	3
Phosphoric Acid Concentrated to 158°F	4	4	1	1	1	1	X	3	2	3	4	1	X	X	X	1	3	4
Phosphoric Acid, 20%	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phosphoric Acid, 45%	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phosphorus (Molten)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phosphorus Oxichloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Phosphorus Trichloride	4	4	1	1	1	1	X	4	4	X	X	1	X	X	4	4	1	X
Phosphorus Trichloride Acid	4	4	1	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Phthalic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Phthalic Anhydride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pickling Solution	4	4	3	2	1	1	X	4	4	4	4	3	4	4	4	2	4	4
Picric Acid (aq)	1	1	1	1	1	1	X	1	2	X	X	1	2	2	1	1	2	X
Picric Acid Molten	2	2	2	1	1	1	X	2	2	X	X	2	2	2	2	2	2	4
Pine Oil	1	1	4	1	1	1	X	4	4	X	X	4	4	4	4	4	1	4
Pine Tar	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Pinene	2	2	4	1	1	1	X	3	4	4	2	4	4	4	4	4	1	4
Piperazine	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Piperidine	4	4	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	4
Piranha (H2SO4:H2O2)(70:30)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Plating Solution (Co,Cu,Au,In,Fe,Pb,Ni,Ag,Sn,Zn)	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X	X
Plating Solutions Chrome	4	4	2	1	1	1	X	4	4	4	4	2	4	4	4	4	2	2
Plating Solutions Others	1	1	1	1	1	1	X	4	4	X	X	1	X	X	4	1	X	4
Pneumatic Service	1	1	1	1	1	1	X	1	4	4	1	1	4	4	4	1	4	4
Polyetherpolyol	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Polyethylene Glycol	2	2	1	3	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Polyglycerol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Polyglycol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Polyolester (POE)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Polyvinyl Acetate Emulsion	X	X	1	X	1	1	X	2	4	X	X	1	X	X	2	2	X	X
Potassium (Molten)	X	X	X	X	4	4	X	X	X	X	X	X	X	X	X	X	X	X
Potassium Acetate	2	2	1	4	1	1	X	2	4	4	4	1	4	1	1	1	4	4
Potassium Acid Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Alum	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Aluminum Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Antimonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bicarbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bichromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bifluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bisulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bisulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bitartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Bromide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Chlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Chloride	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Potassium Chromates	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Citrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Cupro Cyanide	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Potassium Cyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Cyanide	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Potassium Dichromate	1	1	1	1	1	1	X	1	1	1	2	1	1	1	1	1	1	1
Potassium Diphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Ferricyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Fluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Glucocyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Hydroxide 50%	2	2	1	4	1	1	X	2	2	4	4	1	2	2	2	1	3	3
Potassium Hypochlorite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Iodate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Iodide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Metabisulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Potassium Metachromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Metasilicate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Potassium Monochromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Nitrate	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Potassium Nitrite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Oxalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Perchlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Perfluoro Acetate	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Potassium Permanganate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Peroxide	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Potassium Persulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Phosphate (Acid)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Phosphate (Alkaline)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Phosphate (Di/Tri Basic)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Pyrosulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Salts	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Potassium Silicate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Potassium Sodium Tartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Stannate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Stearate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Sulfate	1	1	1	1	1	1	X	1	2	4	1	1	1	2	2	2	1	1
Potassium Sulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Sulfite	1	1	1	1	1	1	X	1	2	4	1	1	1	2	2	2	1	1
Potassium Tartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Thiocyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Thiosulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Potassium Triphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Prestone Antifreeze	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
PRL-High Temp. Hydr. Oil	2	2	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	2
Producer Gas	1	1	4	1	1	1	X	2	4	2	1	4	4	4	4	2	2	2
Propane	1	1	4	1	1	1	X	2	4	1	3	4	4	4	4	2	2	4
Propionaldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Propionic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Propionitrile	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Propyl Acetate	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Propyl Acetone or n-Propyl Acetone	4	4	1	4	1	1	X	4	4	4	4	1	4	4	4	4	4	4
Propyl Alcohol	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Propyl Nitrate	4	4	2	4	1	1	X	4	4	4	X	2	4	4	4	4	4	4
Propyl Propionate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Propylamine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Propylbenzene	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Propylene	3	3	4	1	1	1	X	4	4	4	4	4	4	4	4	4	3	4
Propylene Chloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X

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Propylene Chlorohydrin	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Propylene Dichloride	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Propylene Glycol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Propylene Imine	X	X	X	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Propylene Oxide	4	4	2	4	1	1	X	4	4	4	4	2	4	4	4	4	4	4
Pydraul 90e	4	4	1	1	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Pydraul, 10E	4	4	1	4	1	1	X	4	4	4	4	1	4	4	4	4	4	1
Pydraul, 115E	4	4	1	1	1	1	X	4	4	4	4	1	4	4	4	4	3	4
Pydraul, 230C, 312C, 540C, A200	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Pydraul, 29ELT 30E, 50E, 65E	4	4	1	1	1	1	X	4	4	4	4	1	4	4	4	4	1	1
Pyranol Transformer Oil	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	2	1	4
Pyridine	4	4	2	1	2	1	X	4	4	4	3	4	4	4	4	4	2	X
Pyridine Oil	4	4	2	4	1	1	X	4	4	4	X	2	4	4	4	4	4	4
Pyridine Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pyridine Sulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pyrogallol (Pyrogallic Acid)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Pyrogard 42 43 55	4	4	1	1	1	1	2	4	X	X	X	X	X	X	X	X	X	X
Pyrogard 53 Mobil Phosphate Ester	4	4	1	1	1	1	X	4	4	4	4	1	4	4	4	4	4	4
Pyrogard D, Mobil Water-in-Oil Emulsion	1	1	4	4	1	1	X	2	4	X	1	4	4	4	4	1	2	3
Pyrolygneous Acid	4	4	2	4	1	1	X	2	4	4	4	2	4	4	4	2	4	X
Pyrolube	4	4	2	1	1	1	X	4	4	4	4	2	4	4	4	4	2	2
Pyrosulfuric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Pyrosulfuryl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Pyrrrole	4	4	4	4	1	1	X	4	2	4	X	4	2	2	2	2	4	2
Pyruvic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Quinidine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Quinine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Quinine Bisulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Quinine Hydrochloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Quinine Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Quinine Tartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Quinizarin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Quinoline	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Quinone	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Quintolubric	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Quintolubric 888	1	1	4	1	1	1	1	2	X	X	1	2	X	X	X	X	X	X
Radiation (Gamma, 1.0 E+07 Rads)	3	3	2	4	3	2	X	X	X	X	4	4	X	X	4	X	4	2
Raffinate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Rapeseed Oil	2	2	1	1	1	1	X	2	4	2	2	1	4	4	4	2	1	4
Red Line 100 Oil	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Red Oil (MIL-H-5606)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Resorcinol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Rhodium	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

NOTE: *These temperature ranges will apply to the majority of media for which the material is potentially recommended. With some media however, the service temperature range may be significantly different. ALWAYS TEST UNDER ACTUAL SERVICE CONDITIONS.

COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
- 3 - Doubtful (sometimes OK for static seal)
- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Riboflavin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Ricinoleic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
RJ-1 (MIL-F-25558)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
RJ-4 (MIL-F-82522)	2	2	4	1	1	1	X	4	4	2	2	4	X	X	4	X	1	4
Rosin	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
RP-1 (MIL-R-25576)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Saccharin Solution	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sal Ammoniac	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	2
Salicylic Acid	2	2	1	1	1	1	X	X	2	X	X	1	2	1	1	X	1	X
Santo Safe 300	4	4	3	1	1	1	X	4	4	4	X	3	4	4	4	X	1	1
Sea (Salt) Water	1	1	1	1	1	1	X	2	1	4	2	1	1	1	1	1	1	1
Sebacic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Selenic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Selenous Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sewage	1	1	1	1	1	1	X	2	1	4	4	1	1	1	1	1	1	1
SF 1154 GE Silicone Fluid	2	2	1	1	1	1	X	1	1	1	2	1	X	1	1	1	1	4
SF1147 GE Silicone Fluid	2	2	3	1	1	1	X	X	X	X	X	3	X	X	X	X	X	4
SF96 GE Silicone Fluid	2	2	1	1	1	1	X	1	1	1	2	1	1	1	1	1	1	4
Shell 3XF Mine Fluid (Fire resist hydr.)	1	1	4	1	1	1	X	2	4	4	4	4	4	4	4	2	1	X
Shell Alvania Grease #2	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	2
Shell Carnea 19 and 29	1	1	4	1	1	1	X	4	4	1	2	4	4	4	4	4	1	X
Shell Diala	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Shell Irua 905	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Shell Lo Hydrax 27 and 29	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Shell Macome 72	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Shell Tellus #32 Pet. Base	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Shell Tellus #68	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Shell Tellus 27 (Petroleum Base)	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Shell Tellus 33	1	1	4	1	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Shell UMF (5% Aromatic)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Shellac	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Silane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Silicate Esters	2	2	4	1	1	1	X	1	4	X	1	4	4	4	4	X	1	4
Silicon Fluoride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Silicon Tetrachloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Silicon Tetrafluoride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Silicone Greases	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	2	3
Silicone Oils	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	3	3
Silver Bromide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Silver Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Silver Cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Silver Nitrate	2	2	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Silver Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hifluor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)

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- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
- 3 - Doubtful (sometimes OK for static seal)
- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Sinclair Opaline CX-EP Lube	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Skelly, Solvent B, C, E	1	1	4	1	1	1	X	4	4	X	X	4	4	4	4	4	1	X
Skydrol 500 B4	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	3	3
Skydrol 7000	4	4	1	2	1	1	1	4	X	X	X	X	X	X	X	X	X	X
Skydrol LD-4	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	3	3
Soap Solutions	1	1	1	1	1	1	X	2	2	4	4	1	1	1	2	1	1	1
Socony Mobile Type A	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Socony Vacuum AMV AC781 (Grease)	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Socony Vacuum PD959B	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Soda Ash	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Sodium (Molten)	X	X	X	X	4	4	X	X	X	X	X	X	X	X	X	X	X	X
Sodium Acetate	2	2	1	4	1	1	X	2	4	3	3	1	4	1	1	1	4	4
Sodium Acid Bisulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Acid Fluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Acid Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Aluminate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Aluminate Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Anthraquinone Disulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Antimonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Arsenate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Arsenite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Benzoate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Bicarbonate (Baking Soda)	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Sodium Bichromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Bifluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Bisulfate or Bisulfite	1	1	1	1	1	1	X	1	2	4	X	1	2	2	1	1	1	1
Sodium Bisulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Bitartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Borate	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Sodium Bromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Bromide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Carbonate (Soda Ash)	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Sodium Chlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Chloride	1	1	1	1	1	1	X	1	1	X	1	1	1	1	1	1	X	1
Sodium Chlorite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Chloroacetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Chromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Citrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Cyanamide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Cyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Cyanide	1	1	1	X	1	1	X	1	1	X	X	1	1	1	1	1	X	1
Sodium Diacetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Diphenyl Sulfonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

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- 2 - Fair (usually OK for static seal)
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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hiflor FFKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FFKM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Sodium Diphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Disilicate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Ethylate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Ferricyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Ferrocyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Fluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Fluorosilicate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Glutamate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Hydride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Sodium Hydrogen Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Hydrosulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Hydrosulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Hydroxide, 3 Molar	2	2	1	2	1	1	X	2	2	4	2	1	1	1	1	1	2	1
Sodium Hypochlorite	2	2	1	1	1	1	X	2	2	4	4	1	2	2	2	1	2	2
Sodium Hypophosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Hypophosphite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Hyposulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Iodide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Lactate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Metaphosphate	1	1	1	1	1	1	X	2	1	X	X	1	1	1	1	2	1	X
Sodium Metasilicate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Methylate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Monophosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Nitrate	2	2	1	X	1	1	X	2	2	X	X	1	1	1	2	1	X	4
Sodium Oleate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Orthosilicate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Oxalate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Perborate	2	2	1	1	1	1	X	2	2	X	X	1	2	2	2	2	1	2
Sodium Percarbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Perchlorate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Peroxide	2	2	1	1	1	1	X	2	2	4	4	1	2	2	2	2	1	4
Sodium Persulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Phenolate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Phenoxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Phosphate (Dibasic)	1	1	1	1	1	1	X	2	1	1	1	1	1	1	1	1	X	4
Sodium Phosphate (Mono)	1	1	1	1	1	1	X	2	1	1	1	1	1	1	1	1	X	4
Sodium Phosphate (Tribasic)	1	1	1	1	1	1	X	2	1	1	1	1	1	1	1	1	X	1
Sodium Plumbite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Pyrophosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Resinate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Salicylate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Salts	1	1	1	1	1	1	X	2	1	1	1	1	1	1	1	1	1	1
Sodium Sesquisilicate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X

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Nitrile (General Service) -34°C to 121°C (-30°F to 250°F) AFLAS -9°C to 232°C (15°F to 450°F) Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F) Neoprene -51°C to 107°C (-60°F to 225°F) Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F) Polyacrylate -21°C to 177°C (-5°F to 350°F) Ethylene Propylene -57°C to 121°C (-70°F to 250°F) Polyurethane -40°C to 82°C (-40°F to 180°F) Fluorocarbon -26°C to 205°C (-15°F to 400°F) Butyl -59°C to 120°C (-75°F to 250°F) Hiflor -26°C to 205°C (-15°F to 400°F) Fluorosilicone -73°C to 177°C (-100°F to 350°F) Perfluoroelastomer (Paroflor) -26°C to 320°C (-15°F to 608°F) Silicone -115°C to 232°C (-175°F to 450°F)

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hilfl uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Sodium Silicate	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	X	X
Sodium Silicofluoride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Sodium Stannate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Sulfate	1	1	1	1	1	1	X	1	2	4	1	1	2	2	2	1	1	1
Sodium Sulfide and Sulfite	1	1	1	1	1	1	X	1	2	4	1	1	2	2	2	1	1	1
Sodium Sulfo cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Tartrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Tetraborate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Tetraphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Tetrasulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Thioarsenate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Thiocyanate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Thiosulfate	2	2	1	1	1	1	X	1	2	4	1	1	2	2	2	1	1	1
Sodium Trichloroacetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sodium Triphosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Solvesso 100 150	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Sorbitol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sour Crude Oil	3	3	4	1	1	1	X	4	4	4	4	4	4	4	4	X	4	4
Sour Natural Gas	3	3	4	1	1	1	X	4	4	4	4	4	4	4	4	X	4	4
Sovasol No. 1 2 and 3	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
Sovasol No. 73 and 74	2	2	4	1	1	1	X	2	4	2	2	4	4	4	4	2	1	4
Soybean Oil	1	1	3	1	1	1	X	3	4	1	X	3	4	4	4	3	1	1
Spry	1	1	2	1	1	1	X	2	4	1	1	2	4	4	4	4	1	1
SR-10 Fuel	1	1	4	1	1	1	X	4	4	2	2	4	4	4	4	4	1	4
SR-6 Fuel	2	2	4	1	1	1	X	4	4	2	2	4	4	4	4	4	1	4
Standard Oil Mobilube GX90-EP Lube	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Stannic Ammonium Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Stannic Chloride	1	1	1	1	1	1	X	4	1	X	X	1	1	1	1	4	1	2
Stannic Chloride, 50%	1	1	1	1	1	1	X	4	1	X	X	1	1	1	1	4	1	2
Stannic Tetrachloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Stannous Bisulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Stannous Bromide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Stannous Chloride 15%	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	2
Stannous Fluoride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Stannous Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Stauffer 7700	2	2	4	1	1	1	X	4	4	2	X	4	4	4	4	4	2	4
Steam Below 400°F	4	4	1	4	1	1	X	4	4	4	4	2	4	4	4	4	4	3
Steam, 400° - 500°F	4	4	3	4	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Steam, Above 500°F	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Stearic Acid	2	2	2	X	1	1	X	2	2	X	X	2	2	2	2	2	X	2
Stoddard Solvent	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Strontium Acetate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Strontium Carbonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Strontium Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Strontium Hydroxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Strontium Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Styrene (Monomer)	4	4	4	2	1	1	X	4	4	4	X	4	4	4	4	4	3	4
Succinic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sucrose Solutions	1	1	1	1	1	1	X	2	1	4	4	1	1	1	1	2	1	1
Sulfamic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sulfanilic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sulfanilic Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Sulfanilimide	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Sulfite Liquors	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sulfolane	2	2	1	2	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Sulfonated Oils	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Sulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sulfonyl Chloride	3	3	1	3	2	2	X	1	1	4	4	1	1	1	1	1	1	2
Sulfur	4	4	1	1	1	1	X	1	4	4	X	1	4	4	4	X	1	X
Sulfur (Molten)	4	4	3	1	1	1	X	3	4	4	4	3	4	4	4	4	3	3
Sulfur Chloride	4	4	4	1	1	1	X	4	4	4	X	4	4	4	4	4	1	3
Sulfur Dioxide, Dry	4	4	1	4	1	1	X	4	2	4	X	2	2	2	2	4	2	2
Sulfur Dioxide, Liquidified under pressure	4	4	1	4	1	1	X	4	4	4	X	2	4	4	4	4	2	2
Sulfur Dioxide, Wet	4	4	1	4	1	1	X	2	4	4	X	1	4	4	4	3	2	2
Sulfur Hexafluoride	2	2	1	3	2	2	3	1	X	X	X	X	X	X	X	X	X	X
Sulfur Liquors	2	2	2	1	1	1	X	2	2	4	X	2	2	2	2	2	2	4
Sulfur Monochloride	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Sulfur Tetrafluoride	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Sulfur Trioxide Dry	4	4	2	1	1	1	X	4	3	4	X	2	2	2	2	4	2	2
Sulfuric Acid (20% Oleum)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sulfuric Acid, 3 Molar to 158°F	2	2	1	1	1	1	X	2	3	2	4	1	X	X	X	1	1	1
Sulfuric Acid, Concentrated Room Temp	X	X	3	1	1	1	X	X	X	X	3	X	X	X	X	X	X	X
Sulfuric Acid, Concentrated to 158°F	4	X	4	1	1	1	X	4	4	4	4	4	X	X	X	X	4	4
Sulfuric Chlorohydrin (Chlorosulfonic Acid)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Sulfurous Acid	2	2	2	1	1	1	X	2	2	4	3	2	2	2	2	1	X	4
Sunoco #3661	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Sunoco All purpose grease	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Sunoco SAE 10	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Sunsafe (Fire resist. hydr. fluid)	1	1	4	1	1	1	X	2	4	4	4	4	4	4	4	2	1	X
Super Shell Gas	1	1	4	1	1	1	X	2	4	2	2	4	4	4	4	4	2	4
Surfuryl Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Swan Finch EP Lube	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	4
Swan Finch Hypoid-90	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Tallow	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Tannic Acid -10%	1	1	1	1	1	1	X	1	2	4	X	1	1	1	1	1	1	2
Tar, bituminous	2	2	4	1	1	1	X	3	4	4	X	4	4	2	3	4	1	2

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Tartaric Acid	1	1	2	1	1	1	X	2	4	X	1	2	2	1	3	1	1	1
Tellone II	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Terephthalic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Terpineol	2	2	3	1	1	1	X	4	4	X	2	3	4	4	4	4	1	X
Terpinyl Acetate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Tertiary Amyl Methyl Ether (TAME)	X	X	X	X	2	1	X	X	X	X	X	X	X	X	X	X	X	X
Tertiary Butyl Catechol or p-tert-butylcatechol	4	4	2	1	1	1	X	2	2	4	4	2	2	4	4	2	1	X
Tertiary Butyl Mercaptan	4	4	4	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Tetrabromoethane	4	4	4	1	1	1	X	4	4	4	X	4	4	4	4	4	2	4
Tetrabromomethane	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Tetrabutyl Titanate	2	2	1	1	1	1	X	2	2	X	X	2	2	2	2	4	4	4
Tetrachloroethylene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Tetrachoroethane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	X
Tetraethyl Lead	2	2	4	1	1	1	X	2	4	X	X	4	4	4	4	4	2	X
Tetraethyl Lead "Blend"	2	2	4	1	1	1	X	4	4	X	X	4	4	4	4	4	2	X
Tetraethyl Orthosilicate (TEOS)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Tetrahydrofuran	4	4	2	4	1	1	X	4	4	4	3	2	4	4	4	4	4	4
Tetrahydrothiophen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tetralin	4	4	4	1	1	1	X	4	4	X	X	4	4	4	4	4	1	4
Tetramethyl Ammonium Hydroxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	X	2
Tetramethylcyclotetrasiloxane (TMCTS)	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Tetramethyldihydropyridine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Tetraphosphoglucoate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Tetraphosphoric Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Tetrasodium Pyrophosphate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Texaco 3450 Gear Oil	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	4
Texaco Capella A and AA	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Texaco Meropa 220 (No Lead)	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	1	4
Texaco Regal B	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	4
Texaco Uni-Temp Grease	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	2
Texamatic "A" 1581 Fluid	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Texamatic "A" 3401 Fluid	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Texamatic "A" 3525 Fluid	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Texamatic "A" 3528 Fluid	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Texamatic "A" Transmission Oil	1	1	4	1	1	1	X	2	4	1	2	4	4	4	4	4	2	4
Texas 1500 Oil	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	2
Therminol 44	4	4	4	1	1	1	X	4	X	4	X	4	X	X	X	X	X	4
Therminol 55	2	2	4	1	1	1	X	4	X	2	X	4	X	X	X	X	X	4
Therminol 66	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Therminol FR	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Therminol VP-1, 60 65	4	4	4	1	1	1	X	4	X	4	X	4	X	X	X	X	X	2
Thio Acid Chloride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Thioamyl Alcohol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifi uor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfl uoroelastomer (Paroil uor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

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COMPOUND COMPATIBILITY RATING

- 1 - Satisfactory
- 2 - Fair (usually OK for static seal)
- 3 - Doubtful (sometimes OK for static seal)
- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Thiodiacetic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Thioethanol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Thioglycolic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Thiokol TP-90B	4	4	1	1	1	1	X	2	4	X	X	1	X	X	X	2	2	X
Thiokol TP-95	4	4	1	1	1	1	X	2	4	X	X	1	X	X	X	2	2	X
Thionyl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Thiophene (Thiofuran)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Thiophosphoryl Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Thiourea	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Thorium Nitrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Tidewater Multigear, 140 EP Lube	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Tidewater Oil-Beedol	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	2
Tin Ammonium Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Tin Chloride	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Tin Tetrachloride	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Titanic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Titanium Chloride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Titanium Dioxide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Titanium Sulfate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Titanium Tetrachloride	2	2	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Toluene	4	4	4	1	2	1	X	4	4	4	4	4	4	4	4	4	2	4
Toluene Bisodium Sulfite	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Toluene Diisocyanate (TDI)	4	4	2	4	1	1	X	4	4	4	X	2	4	4	4	4	4	4
Toluene Sulfonyl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Toluenesulfonic Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Toluidine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Toluol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Toluquinone	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Tolylaldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Toothpaste	1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1
Transformer Oil	1	1	4	1	1	1	X	2	4	2	1	4	4	4	4	4	1	2
Transmission Fluid Type A	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Triacetin	2	2	1	4	1	1	X	2	3	4	4	1	2	2	2	2	4	X
Triaryl Phosphate	4	4	1	1	1	1	X	4	4	4	4	1	4	4	4	4	2	3
Tribromomethylbenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Tributoxyethyl Phosphate	4	4	1	1	1	1	X	4	2	4	4	1	2	4	2	4	2	X
Tributyl Citrate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Tributyl Mercaptan	4	4	4	1	1	1	X	4	4	4	X	4	4	4	4	4	3	4
Tributyl Phosphate	4	4	1	4	1	1	X	4	4	4	4	2	4	2	2	4	4	4
Tributylamine	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Trichloroacetic Acid	2	2	2	3	1	1	X	4	2	4	4	2	2	2	2	4	4	X
Trichloroacetyl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Trichlorobenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifi uor FKM	Perfl uoroelastomer FFKM	Afl as (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene- Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Trichloroethane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Trichloroethanolamine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Trichloroethylene	3	3	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Trichloromethane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Trichloronitromethane (Chloropicrin)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Trichlorophenylsilane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Trichloropropane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Trichlorosilane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Tricresyl Phosphate	4	4	1	2	1	1	X	3	2	4	4	1	4	4	4	4	2	3
Triethanol Amine	3	3	2	4	1	1	X	2	2	4	4	2	2	2	2	2	4	X
Triethyl Phosphate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Triethylaluminum	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Triethylborane	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Triethylene Glycol	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Triethylenetetramine	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Trifluoroacetic Acid	3	3	1	3	2	2	X	1	1	4	4	1	1	1	1	1	1	2
Trifluoroethane (R-23)	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Trifluoromethane	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	2	4
Trifluorovinylchloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Triisopropylbenzylchloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Trimethylamine (TMA)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Trimethylbenzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Trimethylborate (TMB)	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Trimethylpentane	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Trinitrotoluene (TNT)	4	4	4	2	1	1	X	2	4	4	X	4	4	4	4	2	2	X
Trioctyl Phosphate	4	4	1	2	1	1	X	4	4	4	4	1	4	4	4	4	2	3
Triphenylphosphite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Tripoly Phosphate	4	4	1	2	1	1	X	3	4	4	4	1	4	4	4	4	1	3
Tripotassium Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Trisodium Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Tritium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tung Oil (China Wood Oil)	1	1	4	1	1	1	X	2	4	X	3	3	4	4	4	3	2	4
Tungsten Hexafluoride	X	X	X	X	2	2	X	X	X	X	X	X	X	X	X	X	X	X
Tungstic Acid	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Turbine Oil	1	1	4	1	1	1	X	4	4	1	1	4	4	4	4	4	1	4
Turbine Oil #15 (MIL-L-7808A)	2	2	4	1	1	1	X	4	4	2	4	4	4	4	4	4	2	4
Turbo Oil #35	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Turpentine	1	1	4	1	1	1	X	4	4	2	4	4	4	4	4	4	2	4
Type I Fuel (MIL-S-3136)(ASTM Ref. Fuel A)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Type II Fuel MIL-S-3136	2	2	4	1	1	1	X	4	4	3	2	4	4	4	4	4	2	4
Type III Fuel MIL-S-3136(ASTM Ref. Fuel B)	2	2	4	1	1	1	X	4	4	3	2	4	4	4	4	4	2	4
Ucon Hydrolube J-4	1	1	1	1	1	1	X	2	1	4	4	1	2	X	X	X	2	1
Ucon Lubricant 50-HB-100	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1

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	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Ucon Lubricant 50-HB-260	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant 50-HB-5100	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant 50-HB55	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant 50-HB-660	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant LB-1145	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant LB-135	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant LB-285	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant LB-300X	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant LB-625	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Lubricant LB-65	1	1	1	1	1	1	X	1	2	X	X	1	2	2	2	2	1	1
Ucon Oil 50-HB-280x	2	2	1	3	1	1	1	2	X	X	X	X	X	X	X	X	X	X
Ucon Oil Heat Transfer Fluid 500 (Polyalkylene Glycol)	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Oil LB-385	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Ucon Oil LB-400X	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	1
Undecylenic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Undecylic Acid	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Univis 40 (Hydr. Fluid)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	4
Univolt #35 (Mineral Oil)	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Unsymmetrical Dimethyl Hydrazine (UDMH)	2	2	1	4	1	1	X	2	2	X	X	1	1	1	1	1	4	4
UPDI(Ultrapure Deionized Water)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Uranium Hexachloride	X	X	X	1	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Uranium Hexafluoride	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Uranium Sulfate	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Uric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	3	2
Valeraldehyde	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Valeric Acid	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Vanadium Oxide	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Vanadium Pentoxide	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	2	1	2
Varnish	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	4
Vegetable Oil	1	1	3	1	1	1	X	3	4	1	X	3	4	4	4	X	1	1
Versilube F44, F55	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
Versilube F-50	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	3
Vinegar	2	2	2	3	1	1	X	2	2	4	4	2	2	2	2	X	3	3
Vinyl Acetate	2	2	1	3	2	1	1	2	X	X	X	X	X	X	X	X	X	X
Vinyl Benzene	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Vinyl Benzoate	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Vinyl Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Vinyl Fluoride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Vinylidene Chloride	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Vinylpyridine	2	2	4	1	1	1	X	4	4	4	3	4	4	4	4	4	2	X
Vitriol (White)	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
VV-H-910	3	3	1	1	1	1	X	2	1	2	4	2	2	2	2	2	2	2
VV-L-825	1	X	4	X	1	1	X	1	X	1	2	4	X	X	X	X	1	3

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- 4 - Unsatisfactory
- x - Insufficient Data

	Nitrile NBR	Hydrogenated Nitrile HNBR	Ethylene Propylene EPDM	Fluorocarbon FKM	Hifluor FKM	Perfluoroelastomer FFKM	Aflas (TFE/Propylene) FEPM	Neoprene/Chloroprene CR	Styrene-Butadiene SBR	Polyacrylate ACM	Polyurethane AU, EU	Butyl IIR	Butadiene BR	Isoprene IR	Natural Rubber NR	Hypalon CSM	Fluorosilicone FVMQ	Silicone MQ, VMQ, PVMQ
Wagner 21B Brake Fluid	3	3	1	4	1	1	X	2	1	X	X	2	X	X	2	2	4	3
Water	1	2	1	2	1	1	X	2	1	4	4	1	1	1	1	1	1	1
Wemco C	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
Whiskey and Wines	1	1	1	1	1	1	X	1	1	4	4	1	1	1	1	1	1	1
White Liquor	1	1	1	1	1	1	1	1	X	X	X	X	X	X	X	X	X	X
White Oil	1	1	4	1	1	1	X	2	4	1	1	4	4	4	4	4	1	4
White Pine Oil	2	2	4	1	1	1	X	4	4	X	X	4	4	4	4	4	1	4
Wolmar Salt	1	1	1	1	1	1	X	2	1	2	1	1	1	1	1	1	1	1
Wood Alcohol	1	1	1	4	1	1	X	1	1	4	4	1	1	1	1	1	1	1
Wood Oil	1	1	4	1	1	1	X	2	4	1	3	3	4	4	4	3	2	4
Xenon	1	1	1	1	1	1	X	1	1	1	1	1	1	1	1	1	1	1
Xylene	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	1	4
Xylidenes-Mixed-Aromatic Amines	3	3	1	4	1	1	X	4	4	4	4	4	4	4	4	4	4	4
Xylol	4	4	4	1	1	1	X	4	4	4	4	4	4	4	4	4	1	4
Zeolites	1	1	1	1	1	1	X	1	1	X	X	1	1	1	1	1	1	X
Zinc Acetate	2	2	1	4	1	1	X	2	4	4	4	1	4	1	1	4	4	4
Zinc Ammonium Chloride	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Bromide Completion Fluid	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Zinc Chloride	1	1	1	1	1	1	X	1	1	4	X	1	1	1	1	1	1	X
Zinc Chromate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Cyanide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Diethyldithiocarbamate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Dihydrogen Phosphate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Fluorosilicate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Zinc Hydrosulfite	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Naphthenate	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Zinc Nitrate	1	1	1	1	1	1	X	X	1	4	X	1	1	1	1	1	1	X
Zinc Oxide	1	1	1	1	1	1	X	X	1	4	X	1	1	1	1	1	1	X
Zinc Phenolsulfonate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Phosphate	1	1	1	1	1	1	X	1	1	4	1	1	1	1	1	1	1	1
Zinc Salts	1	1	1	1	1	1	X	1	1	4	1	1	1	1	1	1	1	1
Zinc Silicofluoride	X	X	X	X	1	1	X	X	X	X	X	X	X	X	X	X	X	X
Zinc Stearate	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zinc Sulfate	1	1	1	1	1	1	X	1	2	4	4	1	2	2	2	1	1	1
Zinc Sulfide	3	3	1	3	1	1	X	1	1	4	4	1	1	1	1	1	1	2
Zirconium Nitrate	1	1	1	1	1	1	X	1	2	4	4	1	2	2	2	1	1	1

Approximate Service Temperature Ranges for Commonly Used Basic Polymer Types*

Nitrile (General Service) -34°C to 121°C (-30°F to 250°F)* AFLAS -9°C to 232°C (15°F to 450°F)* Nitrile (Low Temperature) -55°C to 107°C (-65°F to 225°F)* Neoprene -51°C to 107°C (-60°F to 225°F)* Hydrogenated Nitrile -32°C to 149°C (-23°F to 300°F)* Polyacrylate -21°C to 177°C (-5°F to 350°F)* Ethylene Propylene -57°C to 121°C (-70°F to 250°F)* Polyurethane -40°C to 82°C (-40°F to 180°F)* Fluorocarbon -26°C to 205°C (-15°F to 400°F)* Butyl -59°C to 120°C (-75°F to 250°F)* Hifluor -26°C to 205°C (-15°F to 400°F)* Fluorosilicone -73°C to 177°C (-100°F to 350°F)* Perfluoroelastomer (Parofluor) -26°C to 320°C (-15°F to 608°F)* Silicone -115°C to 232°C (-175°F to 450°F)*

NOTE: *These temperature ranges will apply to the majority of media for which the material is potentially recommended. With some media however, the service temperature range may be significantly different. ALWAYS TEST UNDER ACTUAL SERVICE CONDITIONS.

Quality

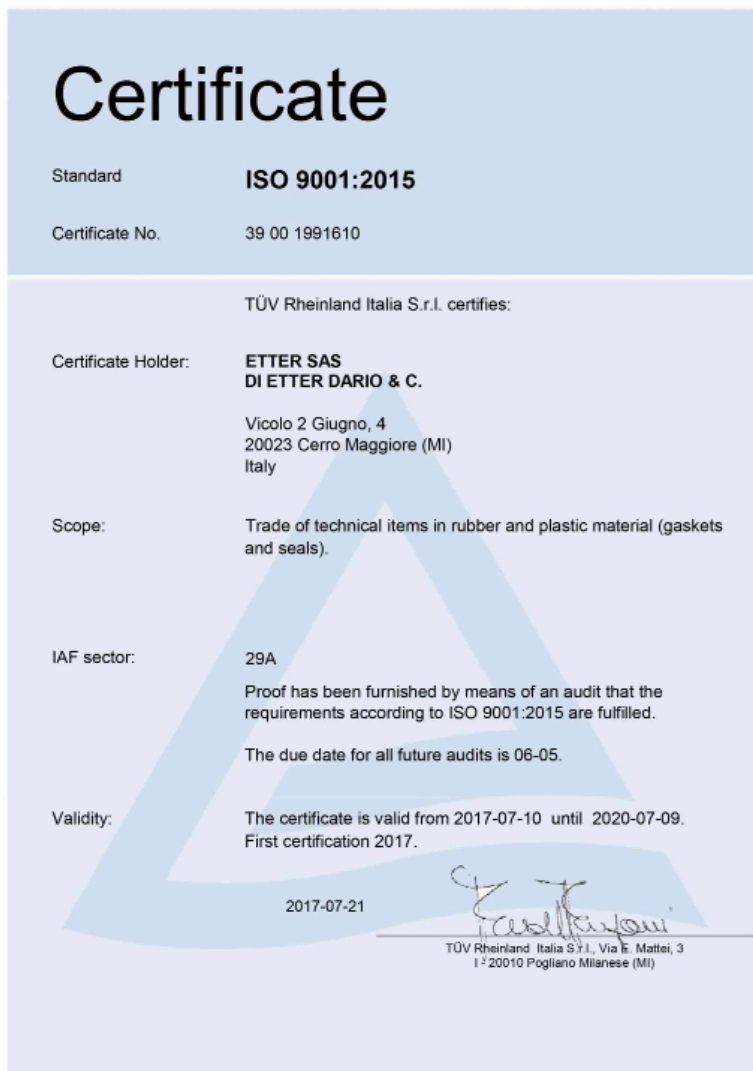
Certification

The implementation of the Quality Management System in compliance with the new UNI EN ISO 2001:2015 standard required the optimization and rationalization of internal and external production processes and created a virtuous circle to deliver concrete results.

Benefits

We have benefited from the implementation of ISO 9001 because its requirements are based on our universal principles of management:

- » Focus on customer
- » Leadership
- » Active participation of people
- » Process Approach
- » Continuous improvement
- » Decision-making process based on evidence
- » Managing relationships



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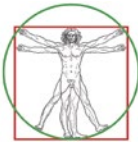
8564 N° 024 D
8562 N° 081 A
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SIGNATURE OF IAF, IAF and IAF Mutual
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TÜVRheinland®
Precisely Right.

Customer satisfaction

Demonstrating our commitment to meeting the highest standards of quality and customer satisfaction in order to provide a higher quality assurance on supply and consequently lower cost of controls, all focused on customer satisfaction.



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The image is a complex collage of chemical and scientific elements. In the upper right, a portion of a periodic table is visible, showing elements 29 (Copper, Cu), 47 (Silver, Ag), 79 (Gold, Au), 80 (Mercury, Hg), and 112. The background features several laboratory glassware items, including beakers and flasks, some containing liquids. Overlaid on this are various chemical structures and reactions:

- Hand-drawn chemical structures in black ink, including a benzene ring with a methyl group (CH_3) and a nitro group (NO_2), a benzene ring with a hydroxyl group (OH) and a nitro group (NO_2), and a benzene ring with a hydroxyl group (OH).
- Handwritten chemical equations and reagents: FeCl_3 and conc. HNO_3 with an arrow pointing to a structure; dil HNO_3 with an arrow pointing to another structure; SOCl_2 and COOH with an arrow pointing to a structure; and PCl_5 with an arrow pointing to a structure.
- A ball-and-stick molecular model of a complex organic molecule with red, blue, and grey spheres.
- Other text elements include "purpl", "Fe(13)", "dil HNO₃", "SOCl₂", "COOH", "PCl₅", and "Fe(13)".