SECTION FIVE

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL COMPATIBILITY TABLES

These tables are intended to assist the user in determining the suitability of various elastomers in many different chemical environments. The ratings are based on a combination of published literature, laboratory tests, actual field experience, and informed judgments. As laboratory tests do not necessarily predict end-use performance, users of DICHTOMATIK products should conduct their own evaluations to determine application suitability.

NOTE: Ratings are based on volume swell which is only one indicator of elastomer fluid compatibility and may be based on the solubility parameter alone. Fluid attack on the backbone of the polymer may show up as a change in physical properties such as tensile strength, elongation at break, and hardness.

Elevated temperatures and extended exposure times may create more aggressive conditions than cited in this guide.

This information is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented is based on laboratory testing and does not necessarily indicate end product performance. It is recommended that users of DICHTOMATIK products conduct their own evaluations to determine suitability for the intended application.

COMPATIBILITY RATING SYSTEM

RATING	DESCRIPTION	VOLUME CHANGE	COMMENTS
1	Little or no effect	<10%	Elastomer may exhibit slight swelling and/or loss of physical properties under severe conditions.
2	Possible loss of physical properties	10–20%	Elastomer may exhibit swelling in addition to a change in physical properties. May be suitable for static applications.
3	Noticeable change	20–40%	Elastomer exhibits a noticeable change in swelling and physical properties. Questionable performance in most applications.
4	Excessive change	>40%	Elastomer not suitable for service.
–	Insufficient information	n/a	Insufficient information available for rating.

ELASTOMER ABBREVIATIONS

ABBREVIATION	ELASTOMER TYPE
ACM	Polyacrylate Rubber
TFE/P	Aflas® (Tetrafluoroethylene/Propylene)
AU	Polyurethane
CR	Neoprene/Chloroprene
EPDM	Ethylene-Propylene-Diene Rubber
FFKM	Perfluoroelastomer
FKM	Fluorocarbon Elastomer
FKM-ETP	ETP Based Fluorocarbon Elastomer
FVMQ	Fluorosilicone Rubber
HNBR	Hydrogenated Nitrile (or HSN)
IIR	Butyl Rubber
NBR	Nitrile or Buna-N (Acrylonitrile-Butadiene Rubber)
NR	Natural Rubber
SBR	Styrene-Butadiene Rubber
VMQ	Silicone Rubber

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Acetaldehyde	4	4	2	2	–	–	–	–	4	4	4	2	–	–	–
Acetamide	1	3	1	2	–	–	–	–	1	2	3	1	–	–	–
Acetic Acid Amine	1	3	1	2	–	–	–	–	1	2	3	1	–	–	–
Acetic Acid, 25% to 60%	3	3	1	1	4	–	–	–	2	–	2	1	4	1	4
Acetic Acid, 85%	4	–	–	–	4	–	–	–	–	–	–	1	4	–	4
Acetic Acid, Glacial	3	4	2	2	4	4	4	–	4	3	2	2	4	2	4
Acetic Aldehyde	4	4	2	2	–	–	–	–	4	4	4	2	–	–	–
Acetic Anhydride	4	4	2	3	4	–	1	–	4	2	2	1	2	1	1
Acetic Ester	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Acetic Ether	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Acetic Oxide	4	4	2	3	4	–	1	–	4	2	2	1	2	1	1
Acetone	4	4	1	4	4	4	4	4	4	4	3	1	1	1	1
Acetonitrile	3	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Acetophenone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Acetyl Chloride	4	1	4	3	–	–	–	–	1	1	1	1	–	–	–
Acetyl Oxide	4	4	2	3	4	–	1	–	4	2	2	1	2	1	1
Acetylacetone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Acetylbenzene	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Acetylene	1	1	1	2	1	–	1	1	1	1	1	1	1	1	1
Acetylene Tetrabromide	4	1	1	4	–	–	–	–	2	1	1	1	–	–	–
Acrylic Acid, Ethyl Ester	3	4	3	4	4	4	–	4	4	4	4	1	–	2	–
Acrylonitrile	4	4	4	4	4	–	4	–	4	2	3	1	4	4	4
Adipic Acid	1	2	2	–	1	–	1	–	1	2	2	1	1	1	1
Air Below 200°F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Air, Oil-Containing	1	1	4	1	1	1	1	1	1	–	–	1	4	4	2
Alkazene	4	2	4	4	–	–	–	–	2	2	2	1	–	–	–
Allomaleic Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Allyl Alcohol	2	4	1	–	2	4	2	–	–	–	–	1	1	1	1
Allyl Chloride	2	2	1	–	–	–	–	–	–	2	2	1	–	–	–
Alum (NH_3-Cr-K)	1	1	1	–	1	–	1	–	–	–	–	1	4	1	1
Aluminum Acetate	2	4	1	4	–	–	–	–	4	1	3	1	–	–	–
Aluminum Bromide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Aluminum Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Aluminum Fluoride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Aluminum Hydroxide	2	2	2	–	–	–	–	–	–	1	2	1	–	–	–

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2] Possible loss of physical properties (Volume swell 10–20%)
3] Noticeable change (Volume swell 20–40%)
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–] Insufficient info

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Aluminum Nitrate	2	1	1	2	–	–	–	–	–	1	1	1	–	–	–
Aluminum Orthophosphate	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Aluminum Phosphate	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Aluminum Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Aluminum Sulfate	1	3	1	1	1	4	2	–	1	1	1	1	2	1	1
Amines Mixed (Allyl, Ethyl, etc.)	4	4	2	2	–	–	–	–	4	2	4	1	–	–	–
Aminobenzene	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Aminobenzoic Acid	4	2	2	–	–	–	–	–	–	1	2	1	–	–	–
Aminopyridine	4	4	2	–	–	–	–	–	–	3	4	1	–	–	–
Ammonia	2	4	1	–	2	4	2	–	–	–	–	2	1	1	1
Ammonia Gas, Cold	1	4	1	1	–	–	–	–	4	1	4	1	–	–	–
Ammonia Gas, Hot	4	4	2	1	–	–	–	–	4	2	4	1	–	–	–
Ammonia, Anhydrous Liquid	2	4	1	2	–	–	–	–	4	3	4	1	–	–	–
Ammonia-Aqua	4	2	1	1	–	–	–	–	1	1	1	1	–	–	–
Ammonium Acetate	1	4	1	–	1	4	2	–	–	–	–	1	1	1	1
Ammonium Carbonate	3	4	1	–	1	4	2	–	–	1	3	1	1	1	1
Ammonium Chloride	1	1	1	2	1	4	2	–	1	1	1	1	1	1	1
Ammonium Fluoride	1	4	1	–	1	–	2	–	–	–	–	2	4	2	1
Ammonium Hydroxide	4	2	1	1	–	–	–	–	1	1	1	1	–	–	–
Ammonium Nitrate	1	3	1	2	1	–	2	–	–	1	1	1	4	1	1
Ammonium Persulfate	4	3	1	–	–	–	–	–	1	1	3	1	–	–	–
Ammonium Phosphate	1	4	1	–	1	4	2	–	–	–	–	1	1	1	1
Ammonium Phosphate, Dibasic	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Ammonium Salts	1	3	1	1	–	–	–	–	3	1	3	1	–	–	–
Ammonium Sesquicarbonate	3	4	1	–	1	4	2	–	–	1	3	1	1	1	1
Ammonium Sulfate	1	3	1	–	1	4	2	–	–	1	1	1	4	1	1
Ammonium Sulfide	2	3	1	–	2	4	2	–	–	1	1	1	4	1	2
Amyl Acetate	4	4	1	4	4	–	–	–	4	4	4	1	1	1	4
Amyl Alcohol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Amyl Borate	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Amyl Cabrinol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Amyl Chloride	1	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Amyl Chloronaphthalene	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Amyl Hydrate	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Amyl Hydride	1	1	4	4	1	–	2	–	3	–	–	1	4	4	4

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Amyl Naphthalene	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Aniline	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Aniline Chloride	4	2	3	4	4	4	–	–	2	1	2	1	4	–	4
Aniline Dyes	4	2	2	3	–	–	–	–	2	1	2	1	–	–	–
Aniline Hydrochloride	4	2	3	4	4	4	–	–	2	1	2	1	4	–	4
Aniline Oil	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Aniline Salt	4	2	3	4	4	4	–	–	2	1	2	1	4	–	4
Animal Fats	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Anon	4	–	4	–	4	–	4	–	–	–	–	1	4	4	4
Ant Oil, Artificial	4	4	2	4	4	4	–	–	–	4	4	2	–	–	–
Anthraquinone Sulphonic Acid	2	–	1	–	2	4	–	–	–	–	–	1	1	1	1
Antifreeze, Automotive	1	1	1	1	1	4	1	–	1	2	1	1	1	1	1
Antimony Chloride	1	1	1	1	1	–	1	1	1	–	–	1	1	1	1
Antimony Trichloride	1	–	1	–	1	–	2	–	–	–	–	1	1	1	1
Antimony Trioxide	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Aqua Regia	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Argon	1	1	1	2	–	–	–	–	2	1	1	1	–	–	–
Aroclor 1248	3	1	2	3	–	–	–	–	2	1	1	1	–	–	–
Aroclor 1254	4	1	2	3	–	–	–	–	1	1	1	1	–	–	–
Aroclor 1260	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Aromatic Fuels	2	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Arsenic Acid	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Arsenic Chloride	1	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Arsenic Trichloride	1	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Asphalt	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
ASTM FUEL A	1	1	4	4	1	1	2	2	1	3	1	1	4	4	4
ASTM FUEL B	2	1	4	4	2	4	4	4	1	4	1	1	4	4	4
ASTM FUEL C	3	2	4	4	4	4	4	4	2	4	1	1	4	4	4
ASTM FUEL D	2	1	4	–	–	–	–	–	–	4	1	1	–	–	–
ASTM OIL NO. 1	1	1	4	1	1	2	1	1	1	1	4	1	4	4	4
ASTM OIL NO. 2	1	1	4	3	1	2	2	1	1	2	1	1	4	4	4
ASTM OIL NO. 3	1	1	4	3	2	2	2	1	1	3	1	1	4	4	4
ASTM OIL NO. 4	2	1	4	4	–	–	–	–	2	2	1	1	–	–	–
ASTM OIL NO. 5	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Automatic Transmission Fluid	1	1	4	3	1	2	2	4	1	1	4	1	4	4	4

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Automotive Antifreeze	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Automotive Brake Fluid	4	4	1	2	4	–	2	4	3	1	2	1	1	1	1
Barium Chloride	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Barium Hydroxide	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Barium Monosulfide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Barium Salts	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Barium Sulfate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Barium Sulfide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Beef Tallow Emulsion, Sulphonated	1	1	4	2	1	–	2	–	2	–	–	1	4	4	4
Beer	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Benzaldehyde	4	3	2	4	4	4	4	–	4	2	4	2	2	2	2
Benzene	4	2	4	4	4	4	4	4	2	3	1	1	4	4	4
Benzenemonosulfonic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Benzenesulfonic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Benzine	1	1	4	2	2	1	2	1	1	–	–	1	4	4	4
Benzoic Acid	3	1	3	3	1	4	2	–	2	1	1	1	1	1	1
Benzoic Aldehyde	4	3	2	4	4	4	4	–	4	2	4	2	2	2	2
Benzophenone	4	1	2	–	–	–	–	–	1	1	1	1	–	–	–
Benzotrichloride	4	1	1	–	–	–	–	–	–	3	1	1	–	–	–
Benzoyl Chloride	4	2	4	–	–	–	–	–	2	2	2	1	–	–	–
Benzyl Alcohol	4	1	2	2	–	4	–	–	2	2	1	1	–	–	–
Benzyl Benzoate	4	1	2	–	–	–	–	–	1	3	1	1	–	–	–
Benzyl Chloride	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Benzyl Dichloride	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Bicarburetted Hydrogen	1	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Bisulfite Lye	2	–	1	–	2	4	2	–	–	–	–	2	1	1	1
Bitumen	4	1	–	–	4	–	4	–	–	–	–	1	–	–	–
Black Ash	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Black Liquor	2	2	2	–	–	–	–	–	–	2	2	3	–	–	–
Black Lye	2	1	1	–	2	–	2	–	–	–	–	1	2	1	2
Blast Furnace Gas	3	1	3	1	2	–	2	1	2	1	1	1	4	2	2
Bleach	2	1	2	2	2	–	2	–	2	1	1	1	4	1	4
Bleach Liquor	4	1	1	2	–	–	–	–	2	1	1	1	–	–	–
Bleaching Lye	4	2	1	–	4	4	2	–	–	–	–	1	4	2	2
Blue Vitriol	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1

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Boletic Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Bone Oil	1	1	3	2	1	1	4	1	1	1	1	1	4	4	4
Borax Solutions	2	1	1	2	1	4	2	–	1	1	1	1	1	1	1
Bordeaux Mixture	2	1	1	2	–	–	–	–	2	1	1	1	–	–	–
Boric Acid	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Boron Fluids	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Brake Fluid DOT3, Glycol Type	4	–	1	1	4	–	2	4	1	–	–	–	1	1	1
Brake Fluid, Automotive	4	–	1	1	4	–	2	4	1	–	–	–	1	1	1
Brine	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Bromine	4	1	4	4	4	–	4	–	2	1	1	1	4	–	4
Bromine Pentafluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Bromine Trifluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Bromine Water	4	–	–	–	4	–	4	–	–	–	–	–	4	–	4
Bromine, Anhydrous	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Bromine, Liquid	4	–	–	–	4	–	4	–	–	–	–	–	4	–	4
Bromobenzene	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Bromochloromethane	4	1	2	4	–	–	–	–	2	3	1	1	–	–	–
Bromochlorotrifluoroethane	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Bromomethane	3	1	4	4	4	4	4	4	1	2	1	1	4	4	4
Bromotrifluoromethane	1	2	1	4	–	–	–	–	2	–	2	2	–	–	–
Bunker Oil	2	1	4	2	2	–	–	–	1	2	1	1	–	–	–
Butadiene	4	2	4	3	–	–	2	–	1	2	1	1	4	4	4
Butane	1	1	4	4	1	1	2	1	1	2	1	1	4	4	4
Butanediol	1	–	1	–	1	4	1	–	–	–	–	–	2	1	1
Butanoic Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Butanol	4	1	2	2	4	4	2	–	1	1	1	1	1	1	1
Butter	1	1	–	–	1	–	2	–	–	–	–	1	4	–	4
Butyl Acetate	4	4	2	4	4	–	4	–	4	4	3	1	2	2	4
Butyl Acetyl Ricinoleate	2	1	1	–	–	–	–	–	2	1	1	1	–	–	–
Butyl Acrylate	4	4	4	–	–	–	–	–	4	4	4	1	–	–	–
Butyl Alcohol	4	1	2	2	4	4	2	–	1	1	1	1	1	1	1
Butyl Benzoate	4	1	1	–	–	–	–	–	1	–	1	1	–	–	–
Butyl Butyrate	4	1	1	–	–	–	–	–	1	–	1	1	–	–	–
Butyl Carbitol	4	1	1	4	–	–	–	–	4	2	1	1	–	–	–
Butyl Cellosolve	3	4	2	–	–	–	–	–	4	3	4	1	–	–	–

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Butyl Cellosolve Acetate	4	2	2	2	–	–	–	–	2	2	2	1	–	–	–
Butyl Ether	4	4	3	4	4	–	4	–	3	4	4	1	4	2	4
Butyl Hydride	1	1	4	4	1	1	2	1	1	2	1	1	4	4	4
Butyl Oleate	4	1	2	–	–	–	–	–	2	1	1	1	–	–	–
Butyl Phenol	4	2	4	4	4	4	4	4	–	–	–	1	4	4	4
Butyl Stearate	2	1	4	–	–	–	–	–	2	1	1	1	–	–	–
Butylamine	3	4	4	4	–	–	–	–	4	2	4	1	–	–	–
Butylene	2	1	4	4	1	1	2	–	2	–	1	1	4	–	4
Butylene Glycol	1	2	1	1	1	1	1	–	1	–	–	1	1	1	1
Butyne Diol	1	2	1	–	1	1	2	–	–	–	–	2	1	1	1
Butyraldehyde	4	4	2	4	–	–	–	–	4	4	4	2	2	2	2
Butyric Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Butyric Alcohol	4	1	2	2	4	4	2	–	1	1	1	1	1	1	1
Cadmium Cyanide	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Calcine Liquors	1	1	1	–	–	–	–	–	1	1	1	1	–	–	–
Calcium Acetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Calcium Arsenate	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Calcium Bisulfite	3	1	4	2	1	1	1	–	2	1	1	1	1	1	1
Calcium Carbonate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Calcium Chloride	1	1	1	1	1	4	1	–	1	1	1	1	4	1	1
Calcium Cyanide	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Calcium Diacetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Calcium Hydrate	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Calcium Hydrogen Sulfite	3	1	4	2	1	1	1	–	2	1	1	1	1	1	1
Calcium Hydroxide	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Calcium Hypochlorite	3	2	1	2	4	4	2	4	2	1	1	1	4	1	4
Calcium Nitrate	1	1	1	2	1	–	1	–	1	1	1	1	1	1	1
Calcium Oxychloride	3	2	1	2	4	4	2	4	2	1	1	1	4	1	4
Calcium Phosphate	1	1	1	1	1	–	1	–	1	1	1	1	1	1	1
Calcium Salts	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Calcium Silicate	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Calcium Sulfide	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Calcium Sulfite	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Calcium Thiosulfate	2	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Caliche Liquors	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

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Camphor	1	2	3	–	1	–	2	–	–	1	1	1	4	4	4
Camphorated Oil	1	2	4	–	2	–	4	–	–	–	–	1	4	4	4
Cane Sugar Liquors	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Caproic Aldehyde	4	4	2	2	4	–	4	–	4	–	4	2	4	–	4
Caprolactam	1	4	1	–	–	–	–	–	–	2	3	1	–	–	–
Caproyl Alcohol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Carbamate	3	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Carbamide	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Carbazole	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–
Carbitol	2	2	2	2	–	–	–	–	2	–	2	1	–	–	–
Carbolic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Carbolineum	4	1	4	4	4	1	4	4	1	–	–	1	4	4	4
Carbon Dioxide, Dry	1	2	2	2	1	–	1	1	2	1	2	1	1	1	1
Carbon Dioxide, Wet	1	2	2	–	–	–	–	–	–	1	2	1	–	–	–
Carbon Disulfide	4	1	4	4	4	4	4	–	1	1	1	1	4	4	4
Carbon Monoxide, Dry	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Carbon Monoxide, Wet	1	1	1	1	1	–	1	1	1	–	–	1	1	1	1
Carbon Tetrabromide	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Carbon Tetrachloride	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Carbonic Acid	4	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Castor Oil	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Caustic Lime	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Caustic Potash	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Caustic Soda	2	4	1	3	2	–	2	4	3	1	3	1	2	1	2
Cellosolve	4	4	2	4	–	–	–	–	4	1	4	1	–	2	–
Cellosolve Acetate	4	4	2	4	–	–	–	–	4	3	4	1	–	–	–
Cement, Portland	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Cetane	1	1	4	4	–	–	–	–	3	1	1	1	–	–	–
Chloral Hydrate, Aqueous	4	2	2	–	4	–	4	–	–	–	–	1	4	2	4
Chloramine	1	–	1	–	1	–	1	–	–	–	–	2	1	1	1
Chlordane	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Chlorethanol	4	4	2	–	4	–	4	–	–	–	–	2	4	2	4
Chlorextol	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Chloric Acid	4	2	2	–	4	–	4	–	–	–	–	1	4	2	4
Chloride of Lime, Aqueous	4	1	1	–	4	4	4	–	–	–	–	1	4	1	4

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Chlorinated Lime	3	2	1	2	4	4	2	4	2	1	1	1	4	1	4
Chlorinated Naphthalene	4	1	4	4	–	–	–	–	2	4	1	1	–	–	–
Chlorinated Salt Brine	4	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Chlorinated Solvents	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Chlorine Dioxide	4	2	3	–	–	–	–	–	2	3	2	2	–	–	–
Chlorine Trifluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Chlorine Water	4	1	2	4	4	–	4	–	–	1	1	1	4	2	4
Chlorine, Dry Gas	4	1	4	4	–	–	–	–	1	3	1	1	–	–	–
Chlorine, Liquid	4	2	2	–	4	–	4	–	–	–	–	2	4	2	4
Chlorine, Wet	4	2	2	4	4	2	4	–	2	3	1	2	4	2	4
Chlorine, Wet Gas	4	2	2	–	4	–	4	–	–	–	–	2	4	2	4
Chloroacetic Acid	3	4	2	–	2	4	2	–	4	2	4	2	4	1	4
Chloroacetone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Chloroaniline	4	3	2	–	–	–	–	–	–	2	3	1	–	–	–
Chlorobenzene	4	2	4	4	4	–	4	4	3	–	1	2	4	4	4
Chlorobenzotrifluoride	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Chlorobromomethane	4	2	2	4	–	–	–	–	2	3	1	2	–	2	–
Chlorobutadiene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Chlorododecane	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Chloroethane	2	2	3	4	2	2	2	4	1	2	1	1	2	2	2
Chloroethylbenzene	4	2	4	4	–	–	–	–	2	2	2	1	–	–	–
Chloroform	4	2	4	4	4	4	4	–	3	4	1	1	4	4	4
Chlorohydrin	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Chloromethane	4	2	4	4	4	2	4	–	2	4	1	1	4	4	4
Chloronitroethane	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Chloronitrous Acid	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Chloropentafluoroethane	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
Chlorophenol	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Chloroprene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Chloropropylene Oxide	4	4	2	4	–	–	–	–	4	4	4	2	–	–	–
Chlorosulfonic Acid	4	4	4	4	4	–	4	4	4	–	4	1	4	4	4
Chlorotoluene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Chlorotrifluoromethane	1	2	1	4	2	2	1	–	4	–	1	2	–	1	1
Chrome Alum	1	1	1	1	–	–	–	–	–	3	1	1	–	–	–
Chrome Plating Solution	4	1	2	2	–	–	–	–	2	1	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Chromic Acid	4	1	2	3	4	–	4	–	3	1	1	1	4	–	4
Chromic Anhydride	4	1	2	3	4	–	4	–	3	1	1	1	4	–	4
Chromic Oxide	4	1	2	–	–	–	–	–	–	1	1	1	–	–	–
Chromic Trioxide	4	1	2	3	4	–	4	–	3	1	1	1	4	–	4
Chromium Potassium Sulfate	2	1	2	–	–	–	–	–	–	2	1	1	–	–	–
Cinene	2	1	4	4	2	–	4	–	3	3	1	1	4	4	4
Cinnamene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Citric Acid	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Clorox	2	1	2	2	–	–	–	–	2	1	1	1	–	–	–
Coal Oil	1	1	4	3	2	1	4	1	1	2	1	1	4	4	4
Coal Tar	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Cobalt Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Cobaltous Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Coconut Fat	1	1	4	1	1	1	2	1	1	–	–	1	4	4	4
Coconut Fatty Alcohol	1	1	2	–	1	–	1	–	–	–	–	1	2	2	2
Coconut Oil	1	1	3	1	1	–	2	–	1	1	1	1	4	–	4
Cod Liver Oil	1	1	3	2	1	1	1	1	1	1	1	1	2	2	2
Coke Oven Gas	4	1	4	2	4	–	4	–	2	1	1	1	4	4	4
Coolanol	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Copper Acetate	2	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Copper Chloride	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1
Copper Cyanide	1	1	1	1	–	–	–	–	1	2	1	1	–	–	–
Copper Fluoride	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Copper Nitrate	2	1	2	–	1	–	2	–	–	2	1	1	1	1	1
Copper Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Copper Sulfate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Corn Syrup	1	1	1	1	1	–	2	–	1	1	1	1	2	1	1
Cottonseed Oil	1	1	3	1	1	1	2	–	1	1	1	1	2	2	2
Creosote, Coal Tar	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Cresol	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Cresylic Acid	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Crotonaldehyde	–	4	1	–	–	–	–	–	–	–	–	2	2	1	2
Crotonic Acid	4	4	2	4	–	–	–	–	4	2	4	1	–	–	–
Crude Oil, Asphalt Base	2	1	4	3	2	1	2	1	2	1	1	1	4	4	4
Cumene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–

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Cutting Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Cyanogen Chloride	4	2	3	–	–	–	–	–	–	3	2	1	–	–	–
Cyclohexane	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Cyclohexanol	1	1	4	4	1	1	4	–	2	1	1	1	4	4	4
Cyclohexanone	4	4	3	4	4	–	4	–	4	3	4	2	4	4	4
Cyclohexylamine	4	4	4	–	4	–	4	–	–	–	–	2	4	4	4
Cymene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Cymol	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
DDT	4	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Decahydronaphthalene	4	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Decalin	4	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Decane	1	1	4	2	–	–	–	–	1	1	1	1	–	–	–
Deionized Water	2	1	2	–	–	–	–	–	–	2	2	1	–	–	–
Delco Brake Fluid	3	4	1	3	–	–	–	–	4	1	4	1	–	–	–
Detergent Solutions	1	1	1	1	1	–	2	4	1	1	1	1	1	1	1
Detergents	1	2	1	–	1	–	2	–	–	–	–	2	4	1	2
Developing Fluids	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Dextrin	1	1	1	1	1	4	1	–	1	–	–	1	1	1	1
Dextron	1	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Diacetone	4	4	1	4	2	–	2	–	4	4	4	1	1	1	1
Diacetone Alcohol	4	4	1	4	2	–	2	–	4	4	4	1	1	1	1
Diacetylmethane	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Diamine	2	4	1	3	–	–	–	–	4	1	4	2	–	–	–
Diazinon	3	2	4	4	–	–	–	–	2	4	4	1	–	–	–
Dibenzyl Ether	4	4	2	–	4	–	4	–	–	3	4	1	4	2	4
Dibenzyl Sebacate	4	2	2	3	–	–	–	–	3	1	2	1	–	–	–
Dibromodifluoromethane	4	–	2	4	–	–	–	–	–	–	–	1	–	–	–
Dibromoethylbenzene	4	1	4	4	–	–	–	–	2	4	1	1	–	–	–
Dibromomethane	2	1	4	–	–	–	–	–	1	–	1	1	–	–	–
Dibromotetrafluoroethane	2	2	4	4	–	–	–	–	–	4	2	2	–	–	–
Dibutyl Ether	4	4	3	4	4	–	4	–	3	4	4	1	4	2	4
Dibutyl Phthalate	4	2	2	2	4	–	4	–	2	2	2	1	4	–	4
Dibutyl Sebacate	4	1	3	2	4	–	4	–	2	2	1	2	4	4	4
Dibutylamine	4	4	4	3	–	–	–	–	4	2	4	1	–	–	–
Dicapryl Phthalate	4	2	2	3	–	–	–	–	2	–	2	1	–	–	–

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Dichloracetic Acid	4	4	1	–	4	4	4	–	–	–	–	2	4	1	4
Dichlorethane	4	2	4	4	4	4	4	4	–	–	–	2	4	4	4
Dichlorethylene	4	2	–	–	4	–	4	–	–	–	–	2	4	–	4
Dichloroaniline	–	3	–	–	–	–	–	–	–	–	2	1	–	–	–
Dichlorobenzene	4	1	4	4	4	–	4	–	2	3	1	1	4	4	4
Dichlorobutane	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Dichlorobutene	4	2	4	–	4	–	4	–	–	–	–	1	4	4	4
Dichlorodiethyl Sulfide	–	–	1	1	–	–	–	–	–	–	–	1	–	–	–
Dichlorodifluoromethane	1	2	2	4	2	1	1	–	4	4	1	2	2	2	2
Dichloroethylene	–	2	–	–	–	–	–	–	–	–	1	1	–	–	–
Dichlorofluoromethane	4	4	4	4	–	–	–	–	–	–	4	1	–	–	–
Dichloroisopropyl Ether	4	3	3	4	–	–	–	–	3	3	3	1	–	–	–
Dichloromethane	4	2	4	4	4	4	4	4	2	–	2	1	4	4	4
Dichlorotetrafluoroethane	1	1	1	4	2	1	1	–	2	4	1	2	1	1	1
Dicyclohexylamine	3	4	4	–	–	–	–	–	4	3	4	1	–	–	–
Diesel Fuel	1	1	4	2	1	2	2	2	1	–	–	1	4	4	4
Diesel Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Di-Ester Synthetic Lubricants	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Diethyl Ether	4	4	4	4	4	–	4	–	3	4	4	1	4	4	4
Diethyl Sebacate	4	2	2	2	4	–	4	–	2	2	2	2	4	2	4
Diethyl Sulfate	4	4	1	–	–	–	–	–	–	1	4	1	–	–	–
Diethylamine	2	4	2	2	2	–	4	–	4	4	4	2	4	1	4
Diethylbenzene	4	1	4	4	–	–	–	–	3	3	1	1	–	–	–
Diethylene Glycol	1	2	1	2	1	–	1	–	1	1	2	1	1	1	1
Diethylene Glycol Butyl Ether	4	3	1	4	–	–	–	–	4	2	3	1	–	–	–
Diethylene Glycol Monobutyl Ether	4	1	1	4	–	–	–	–	4	2	1	1	–	–	–
Diethylhexyl Phthalate	4	2	2	3	–	–	–	–	2	2	2	1	–	–	–
Diethylhexyl Sebacate	4	2	2	3	–	–	–	–	3	1	2	1	–	–	–
Diglycolic Acid	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Dihexyl Phtalate	4	4	–	–	4	–	4	–	–	–	–	2	4	–	4
Diisobutyl Ketone	4	4	1	–	4	–	4	–	–	–	–	2	2	1	4
Diisobutylene	2	1	4	4	–	–	–	–	3	–	1	1	–	–	–
Diisooctyl Sebacate	3	2	3	3	–	–	–	–	3	–	2	1	–	–	–
Diisopropyl Ketone	4	4	1	4	–	–	–	–	4	–	4	1	–	–	–
Diisopropylbenzene	4	1	4	–	–	–	–	–	2	–	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Diisopropylidene Acetone	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Dimethyl Acetamide	–	4	–	–	–	–	–	–	–	–	–	1	–	–	–
Dimethyl Ether	3	3	3	1	4	–	4	–	1	4	3	2	2	1	4
Dimethyl Formamide	4	4	2	3	4	4	4	–	4	3	1	2	2	2	4
Dimethyl Ketone	4	4	1	4	4	4	4	4	4	4	3	1	1	1	1
Dimethyl Phthalate	4	1	2	–	–	–	–	–	2	2	1	1	–	–	–
Dimethyl Sulfoxide	3	4	1	–	–	–	–	–	–	2	3	1	–	–	–
Dimethyl Terephthalate	–	2	–	–	–	–	–	–	–	–	–	1	–	–	–
Dimethylamine	4	4	1	–	4	–	4	–	–	–	–	2	4	1	4
Dimethylaniline	3	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Dimethylbenzene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Dinitrotoluene	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Dinonyl Phthalate	4	4	–	–	4	–	4	–	–	–	–	2	4	–	4
Dioctyl Phthalate	4	2	–	–	4	–	4	4	–	–	–	1	4	–	4
Dioctyl Sebacate	4	4	–	–	4	–	4	–	–	–	–	2	4	–	4
Dioxane	4	4	2	4	4	–	4	–	3	4	4	1	2	2	2
Dioxolane	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Dipentene	2	1	4	4	2	–	4	–	3	3	1	1	4	4	4
Diphenyl	4	1	4	4	4	–	4	–	2	3	1	1	4	4	4
Diphenyl Oxide	4	1	4	3	–	–	–	–	2	2	1	1	–	–	–
Dodecyl Alcohol	1	1	2	–	1	–	1	–	–	–	–	1	2	2	2
Drinking Water	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Dry Cleaning Fluids	3	1	4	4	–	–	–	–	2	3	1	2	–	–	–
Engine Oils	1	1	4	2	1	2	2	1	1	–	–	1	4	4	4
Epichlorohydrin	4	4	2	4	–	–	–	–	4	4	4	2	–	–	–
Epoxy Resins	3	4	1	–	–	–	–	–	–	2	4	1	–	–	–
Epsom Salts	1	1	1	1	1	–	2	4	1	–	1	1	–	1	1
Ethanamide	1	3	1	2	–	–	–	–	1	2	3	1	–	–	–
Ethane	1	1	4	3	1	1	2	1	2	–	1	1	4	4	4
Ethanethiol	4	2	3	3	–	–	–	–	–	–	2	1	–	–	–
Ethanol	1	3	1	1	–	–	–	–	1	1	3	1	–	–	–
Ethanolamine	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
Ethene	1	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Ethers	4	4	4	4	–	–	–	–	3	4	4	1	–	–	–
Ethine	1	1	1	2	1	–	1	1	1	1	1	1	1	1	1

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Ethyl Acetate	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Ethyl Acetoacetate	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
Ethyl Acrylate	4	4	2	3	4	–	–	4	4	3	4	2	–	2	–
Ethyl Alcohol	1	3	1	1	–	–	–	–	1	1	3	1	–	–	–
Ethyl Aldehyde	4	4	2	2	–	–	–	–	4	4	4	2	–	–	–
Ethyl Benzene	4	2	4	4	4	–	4	4	2	3	1	1	4	4	4
Ethyl Benzoate	4	1	4	4	–	–	–	–	1	3	1	1	–	–	–
Ethyl Bromide	2	1	4	–	–	–	–	–	1	1	1	1	–	–	–
Ethyl Cellulose	2	4	2	3	–	–	–	–	4	–	4	1	–	–	–
Ethyl Chloride	2	2	3	4	2	2	2	4	1	2	1	1	2	2	2
Ethyl Chloroformate	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Ethyl Cyanide	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Ethyl Cyclopentane	1	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Ethyl Dibromide	4	1	3	–	–	–	–	–	–	2	1	1	–	–	–
Ethyl Dichloride	4	1	3	–	–	–	–	–	–	1	1	1	–	–	–
Ethyl Ether	4	4	3	4	4	4	4	4	4	4	4	1	2	2	4
Ethyl Formate	4	1	2	–	–	–	–	–	1	1	1	2	–	–	–
Ethyl Hexanol	1	1	1	2	–	–	–	–	1	–	1	1	–	–	–
Ethyl Mercaptan	4	2	3	3	–	–	–	–	–	–	2	1	–	–	–
Ethyl Methyl Ketone	4	4	2	4	4	4	4	4	4	4	2	1	4	2	4
Ethyl Oxalate	4	1	1	4	–	–	–	–	2	–	1	1	–	–	–
Ethyl Pentachlorobenzene	4	2	4	4	–	–	–	–	2	2	2	1	–	–	–
Ethyl Silicate	1	1	1	4	–	–	–	–	1	–	1	1	–	–	–
Ethyl Sulfhydrate	4	2	3	3	–	–	–	–	–	–	2	1	–	–	–
Ethyl T-Butyl Ether	3	2	3	–	–	–	–	–	–	2	1	1	–	–	–
Ethylacetic Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Ethylamine	–	4	–	–	–	–	–	–	–	–	4	1	–	–	–
Ethylchlorocarbonate	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Ethylene	1	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Ethylene Alcohol	1	2	1	2	1	4	2	–	1	1	1	1	3	1	1
Ethylene Bromide	4	1	3	4	–	–	–	–	3	–	1	1	–	–	–
Ethylene Chloride	4	2	3	4	2	2	2	4	3	–	2	1	2	2	2
Ethylene Chlorohydrin	4	1	2	3	–	–	–	–	2	1	1	1	–	–	–
Ethylene Diamine	4	4	1	4	4	4	4	4	–	–	–	2	2	1	2
Ethylene Dibromide	4	1	3	4	–	–	–	–	3	–	1	1	–	–	–

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Ethylene Dichloride	4	2	3	4	2	2	2	4	3	–	2	1	2	2	2
Ethylene Glycol	1	2	1	2	1	4	2	–	1	1	1	1	3	1	1
Ethylene Glycol Butyl Ether Acetate	4	2	2	2	–	–	–	–	2	2	2	1	–	–	–
Ethylene Glycol Ethyl Ether Acetate	4	4	2	4	–	–	–	–	4	3	4	1	–	–	–
Ethylene Glycol Monobutyl Ether	3	4	2	–	–	–	–	–	4	3	4	1	–	–	–
Ethylene Glycol Monobutyl Ether	3	4	2	–	–	–	–	–	4	3	4	1	–	–	–
Ethylene Oxide	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Ethylene Trichloride	4	2	4	4	4	4	4	–	3	4	1	2	4	4	4
Ethylenediamine	1	4	1	1	–	–	–	–	4	2	3	2	–	–	–
Ethylmorpholinestannous Octotate	4	4	2	–	–	–	–	–	–	–	4	1	–	–	–
Ethyne	1	1	1	2	1	–	1	1	1	1	1	1	1	1	1
Exhaust Gases, Containing Carbon Dioxide	1	1	1	1	1	–	1	1	1	–	–	1	1	1	1
Exhaust Gases, Containing Carbon Monoxide	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Exhaust Gases, Containing Hydrogen Chloride	2	1	1	–	2	–	1	–	–	–	–	1	1	1	1
Exhaust Gases, Containing Hydrogen Fluoride	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Exhaust Gases, Containing Nitrous Gases	–	1	1	4	–	–	1	4	2	–	–	1	4	2	–
Exhaust Gases, Containing Sulphur Dioxide	2	1	1	–	2	–	1	–	–	–	–	1	2	1	2
Exhaust Gases, Containing Sulphuric Acid	4	1	1	–	4	–	2	–	–	–	–	1	2	1	2
Fatty Acids	2	1	3	3	2	–	2	–	–	1	1	1	–	–	–
Fatty Alcohol	1	1	2	1	1	–	1	1	–	–	–	1	2	2	2
FC 11	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
FC 112	2	1	4	4	–	–	–	–	2	4	1	2	–	–	–
FC 113	2	2	4	4	2	2	1	–	4	4	2	2	–	–	–
FC 114	1	1	1	4	2	1	1	–	2	4	1	2	1	1	1
FC 114B2	2	2	4	4	–	–	–	–	–	4	2	2	–	–	–
FC 115	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
FC 116	1	2	1	–	–	–	–	–	–	–	2	2	–	–	–
FC 12	1	2	2	4	2	1	1	–	4	4	1	2	2	2	2
FC 13	1	2	1	4	2	2	1	–	4	–	1	2	–	1	1
FC 134A	2	4	1	–	2	–	1	–	–	–	–	4	–	–	–
FC 13B1	1	2	1	4	–	–	–	–	2	–	2	2	–	–	–
FC 14	1	1	1	4	–	–	–	–	–	–	1	1	–	–	–
FC 142B	2	2	4	–	–	–	–	–	–	4	2	2	–	–	–
FC 143A	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
FC 152A	1	4	1	–	–	–	–	–	–	–	4	1	–	–	–

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FC 21	4	4	4	4	–	–	–	–	–	–	4	1	–	–	–
FC 218	1	1	1	–	–	–	–	–	–	–	1	2	–	–	–
FC 22	4	4	2	4	4	2	1	–	3	–	4	1	1	1	1
FC 31	4	4	1	–	–	–	–	–	–	–	4	2	–	–	–
FC 32	1	4	1	–	–	–	–	–	–	4	4	1	–	–	–
FC 43	1	1	1	1	–	–	–	–	–	1	3	1	–	–	–
FC 502, F22 and F316	2	2	1	–	–	–	–	–	–	–	2	2	–	–	–
FC 70	–	1	–	–	–	–	–	–	–	–	2	2	–	–	–
FC 75	1	2	1	1	–	–	–	–	2	3	2	4	–	–	–
FC BF Solvent	2	1	4	4	–	–	–	–	2	4	1	2	–	–	–
FC C-316	1	1	1	–	–	–	–	–	–	–	1	2	–	–	–
FC C-318	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
FC MF Solvent	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
FC PCA	1	2	4	4	–	–	–	–	–	4	2	3	–	–	–
FC TA	1	3	2	3	–	–	–	–	–	–	3	2	–	–	–
FC TC	1	1	2	4	–	–	–	–	–	–	1	2	–	–	–
FC TF Solvent	2	2	4	4	2	2	1	–	4	4	2	2	–	–	–
FC TMC	2	1	3	3	–	–	–	–	–	–	1	2	–	–	–
FC T-P35	1	1	1	1	–	–	–	–	–	–	1	2	–	–	–
FC T-WD602	2	1	2	4	–	–	–	–	–	–	1	2	–	–	–
Fermentation Gas	1	1	–	1	1	2	1	–	4	–	–	1	4	–	4
Ferric Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Ferric Nitrate	1	1	1	3	–	–	–	–	1	1	1	1	–	–	–
Ferric Sulfate	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Fish Oil	1	1	3	2	1	1	1	1	1	1	1	1	2	2	2
Flaxseed Oil	1	1	3	1	1	2	1	–	1	1	1	1	2	2	2
Fluorine Gas	4	2	4	4	4	–	–	–	–	–	2	2	4	–	–
Fluorobenzene	4	2	4	4	4	–	4	4	3	–	1	1	4	4	4
Fluoroboric Acid	1	–	1	–	–	–	–	–	–	–	–	1	–	–	–
Fluorosilicic Acid	1	2	2	4	1	–	2	–	4	1	2	1	1	1	1
Fomblin	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–
Formaldehyde	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Formalin	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Formamide	4	3	1	–	4	–	4	–	–	2	3	1	1	1	–
Formic Acid	3	4	2	2	4	4	4	–	3	3	4	2	2	2	2

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Formic Aldehyde	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Freon Mf Solvent	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
Fuel Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Fumaric Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Furaldehyde	4	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Furan	4	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Furane	–	4	–	–	–	4	–	–	–	–	–	2	–	–	–
Furfural	4	4	2	4	4	4	–	–	–	4	4	2	–	–	–
Furfuraldehyde	4	4	2	4	4	4	–	–	–	4	4	2	–	–	–
Furfuran	4	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Furfuryl Alcohol	4	4	2	4	–	4	–	–	4	2	3	2	–	–	–
Furnace Gas, Dry	4	1	1	1	4	–	2	–	1	–	–	1	1	1	1
Furyl Carbinol	4	4	2	4	–	4	–	–	4	2	3	2	–	–	–
Galden	–	1	–	–	–	–	–	–	–	2	2	4	–	–	–
Gallic Acid	2	1	2	–	–	–	–	–	1	1	1	1	–	–	–
Gas Liquor	1	1	4	4	1	–	4	4	4	–	–	1	4	4	4
Gas Oil	1	1	4	2	1	1	2	1	1	–	–	1	4	4	4
Gasoline	1	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Gasoline/Alcohol Blend	4	2	4	4	4	4	4	4	2	–	1	1	4	4	4
Gelatin	1	1	1	1	1	–	2	2	1	–	–	1	1	1	1
Glauber's Salt	4	1	2	–	1	–	2	2	1	1	1	1	1	1	1
Glucose	1	1	1	1	1	–	2	–	1	1	1	1	2	1	1
Glycerin	1	1	1	1	1	–	2	–	1	1	1	1	2	1	1
Glycerol Chlorhydrin	4	–	2	–	4	–	4	–	–	–	–	2	2	2	2
Glycine, Aqueous, 10%	2	1	1	–	2	–	1	–	–	–	–	1	2	1	2
Glycol Chlorohydrin	4	1	2	3	–	–	–	–	2	1	1	1	–	–	–
Glycolic Acid	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Glycols	1	2	1	2	1	4	2	–	1	1	1	1	3	1	1
Grain Alcohol	1	3	1	1	–	–	–	–	1	1	3	1	–	–	–
Gray Acetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Green Sulfate Liquor	2	1	1	1	–	–	–	–	2	1	1	2	–	–	–
Halothane	4	1	4	4	–	–	–	–	2	1	1	2	–	–	–
Halowax Oil	4	1	4	4	–	–	–	–	1	1	1	2	–	–	–
Hartshorn	3	4	1	–	1	4	2	–	–	1	3	1	1	1	1
Heavy Water	1	2	1	1	–	–	–	–	1	1	1	1	–	–	–

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HEF-2	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Helium	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Heptane	1	1	4	4	1	1	2	1	2	3	1	1	4	4	4
Hexachloroacetone	4	4	1	–	–	–	–	–	–	4	4	1	–	–	–
Hexachlorobutadiene	4	1	–	–	4	–	–	–	–	–	–	1	4	–	4
Hexachlorocyclohexane	–	1	–	–	–	2	–	–	–	–	–	1	4	–	4
Hexadecane	1	1	4	4	–	–	–	–	3	1	1	1	–	–	–
Hexafluoroethane	1	2	1	–	–	–	–	–	–	–	2	2	–	–	–
Hexahydrobenzene	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Hexahydrophenol	1	1	4	4	1	1	4	–	2	1	1	1	4	4	4
Hexahydropyridine	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Hexaldehyde	4	4	2	2	4	–	4	–	4	–	4	2	4	–	4
Hexamethylene	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Hexanaphthalene	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Hexane	1	1	4	4	1	1	2	1	1	2	1	1	4	4	4
Hexane Triol	1	1	1	1	1	–	2	–	1	–	–	1	–	1	–
Hexanedioic Acid	1	2	2	–	1	–	1	–	1	2	2	1	1	1	1
Hexanol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Hexene-1	2	1	4	4	2	1	2	1	1	3	1	1	4	4	4
Hexyl Alcohol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Hydraulic Fluids, Hydraulic Oils DIN 51524	1	1	4	2	1	1	2	1	1	–	–	1	4	4	4
Hydraulic Fluids, Oil-in-Water Emulsions HFA	1	–	4	–	1	–	2	–	–	–	–	1	4	4	4
Hydraulic Fluids, Phosphoric Acid Ester HFD	4	–	–	4	4	4	4	4	4	–	–	1	4	–	4
Hydraulic Fluids, Polyglycol-Water Emulsions HFC	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Hydraulic Fluids, Water-in-Oil Emulsions HFB	–	–	4	–	–	–	2	–	–	–	–	1	4	4	4
Hydrazine	2	4	1	3	–	–	–	–	4	1	4	2	–	–	–
Hydrazine Hydrate	2	–	1	–	2	2	2	–	2	–	–	2	4	1	2
Hydrobromic Acid	3	1	1	4	2	4	2	–	3	1	1	1	–	1	–
Hydrochloric Acid	1	1	1	–	2	4	2	–	–	–	–	1	1	1	1
Hydrochloric Acid, Concentrated	3	1	2	4	4	–	4	–	3	–	1	1	2	1	2
Hydrochloric Acid, Hot 37%	4	1	3	3	–	–	–	–	2	1	1	1	–	–	–
Hydrocyanic Acid	2	1	1	2	–	–	2	–	2	1	1	1	–	1	–
Hydrofluoric Acid	4	1	4	4	–	–	–	–	4	–	1	1	–	–	–
Hydrofluoric Acid, Anhydrous	4	1	3	4	–	–	–	–	4	–	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Hydrofluoric Acid, Concentrated Cold	–	–	2	–	–	–	–	–	–	–	–	2	–	2	2
Hydrofluoric Acid, Concentrated Hot	4	3	4	4	–	–	–	–	4	–	3	1	–	–	–
Hydrofluorosilicic Acid	2	1	1	4	–	–	–	–	4	1	1	1	–	–	–
Hydrogen Bromide	3	1	1	4	2	4	2	–	3	1	1	1	–	1	–
Hydrogen Chloride, Anhydrous	4	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Hydrogen Chloride, Gas	4	1	1	–	4	–	4	–	–	–	–	1	2	1	2
Hydrogen Cyanide	2	1	1	2	–	–	2	–	2	1	1	1	–	1	–
Hydrogen Dioxide	3	1	1	2	4	–	4	–	2	1	1	1	4	1	4
Hydrogen Fluoride, Anhydrous	–	4	2	4	–	–	–	–	–	–	4	2	–	–	–
Hydrogen Gas	1	1	1	2	1	–	1	1	2	–	1	1	1	1	1
Hydrogen Peroxide	3	1	1	2	4	–	4	–	2	1	1	1	4	1	4
Hydrogen Sulfide, Dry Cold	2	3	1	3	2	–	2	–	3	1	4	1	2	1	2
Hydrogen Sulfide, Dry Hot	1	4	1	3	–	–	–	–	3	1	4	1	–	–	–
Hydrogen Sulfide, Wet Cold	2	3	1	3	2	–	2	–	3	1	4	1	2	1	1
Hydrogen Sulfide, Wet Hot	1	4	1	3	–	–	–	–	3	1	4	1	–	–	–
Hydroquinone	2	2	3	2	1	–	2	2	2	3	3	2	2	1	2
Hydrosulphite, Aqueous	2	–	1	–	2	–	2	–	–	–	–	2	1	1	1
Hydroxy Benzene	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Hydroxylamine Sulfate	1	–	1	1	1	–	2	–	1	–	–	2	1	1	1
Hydroxymethylbenzene	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Hydyne	2	4	1	4	–	–	–	–	4	–	4	2	–	–	–
Hypnone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Hypochlorous Acid	4	1	2	–	–	–	–	–	–	–	1	1	–	–	–
Ink	1	2	1	1	2	1	1	1	1	–	–	1	1	1	1
Iodine	2	1	2	–	–	–	–	–	1	1	1	1	–	–	–
Iodine Pentafluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Iodine, Tincture	1	1	1	2	1	4	2	–	2	–	–	1	1	1	1
Iodoform	–	1	1	–	–	–	–	–	–	–	–	1	–	1	–
Isobutanol	2	1	1	1	2	4	1	4	2	1	1	1	1	1	1
Isobutene	2	1	4	4	1	1	2	–	2	–	1	1	4	–	4
Isobutyl Alcohol	2	1	1	1	2	4	1	4	2	1	1	1	1	1	1
Isobutyl Aldehyde	3	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Isobutyl Chloride	4	1	4	–	–	–	–	–	–	4	1	1	–	–	–
Isobutyl Ether	2	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Isobutyl N-Butyrate	4	1	1	–	–	–	–	–	1	1	1	1	–	–	–

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

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Isobutylene	2	1	4	4	1	1	2	–	2	–	1	1	4	–	4
Isobutyraldehyde	3	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Isobutyric Acid	2	4	2	–	–	–	–	–	–	3	4	1	–	–	–
Isododecane	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Isooctane	1	1	4	3	1	2	2	1	1	–	1	1	4	4	4
Isophorone	4	4	1	4	–	2	–	–	4	2	4	2	–	1	–
Isopropanol	2	1	1	1	2	–	2	4	2	1	1	1	1	1	1
Isopropyl Acetate	4	4	2	4	4	–	4	4	4	4	4	2	4	2	4
Isopropyl Alcohol	2	1	1	1	2	–	2	4	2	1	1	1	1	1	1
Isopropyl Benzene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Isopropyl Chloride	4	1	4	4	4	4	4	4	2	4	1	1	4	4	4
Isopropyl Ether	3	4	4	4	4	4	4	4	4	4	4	1	–	–	4
Isopropyl Toluene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
JP-3	1	1	4	4	2	2	4	2	1	2	1	1	4	4	4
JP-4	1	1	4	4	2	2	4	2	2	2	1	1	4	4	4
JP-5	1	1	4	4	2	2	4	2	2	2	1	1	4	4	4
JP-6	1	1	4	4	2	2	4	2	2	2	1	1	4	4	4
JP-8	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
JP-9	3	1	4	4	–	–	–	–	2	–	1	1	–	–	–
JP-10	3	1	4	4	–	–	–	–	1	–	1	1	–	–	–
JP-X	1	4	4	–	–	–	–	–	–	2	4	1	–	–	–
Kel-F Liquids	1	2	1	1	–	–	–	–	2	3	2	3	–	–	–
Kerosene	1	1	4	3	2	1	4	1	1	2	1	1	4	4	4
Lacquer Solvents	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Lacquers	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Lactams	4	4	3	–	4	–	4	–	4	3	4	2	4	4	4
Lactic Acid, Cold	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Lactic Acid, Hot	4	1	4	2	–	–	–	–	2	–	1	1	–	–	–
Lard	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Laughing Gas	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1
Lauryl Alcohol	1	1	2	–	1	–	1	–	–	–	–	1	2	2	2
Lavender Oil	2	1	4	4	2	–	4	2	2	1	1	1	–	–	–
Lead Acetate	2	4	1	4	2	4	2	–	4	4	4	1	4	1	1
Lead Nitrate	1	1	1	2	1	4	2	–	1	2	1	1	1	1	1
Lead Oxide	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

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Lemon Juice, Undiluted	1	–	–	1	1	–	2	–	–	–	–	1	1	–	1
Lichenic Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Light Grease	1	1	4	–	1	–	4	1	–	1	1	1	–	–	–
Ligroin	1	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Lime Acetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Lime Bleach	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Lime Hydrate	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Lime Sulfur	4	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Limonene	2	1	4	4	2	–	4	–	3	3	1	1	4	4	4
Lindol	4	2	2	3	4	2	4	0	2	1	1	1	4	2	4
Linoleic Acid	2	2	4	2	2	–	–	–	–	1	2	1	–	–	–
Linseed Oil	1	1	3	1	1	2	1	–	1	1	1	1	2	2	2
Liquefied Petroleum Gas	1	1	4	3	–	–	–	–	3	2	1	1	–	–	–
Liquid Oxygen	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Liquor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lithium Bromide	1	1	1	1	1	1	2	–	1	–	–	1	1	1	1
Lithium Chloride	1	1	1	1	1	1	2	–	1	–	–	1	1	1	1
Lithium Hydroxide	2	3	1	–	–	–	–	–	–	1	3	1	–	–	–
Lye	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Machine Oil, Mineral	1	1	4	2	1	1	2	1	1	–	–	1	4	4	4
Magnesium Chloride	1	1	1	1	1	–	2	4	1	1	1	1	–	1	1
Magnesium Hydrate	2	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Magnesium Hydroxide	2	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Magnesium Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Magnesium Sulfate	1	1	1	1	1	–	2	4	1	–	1	1	–	1	1
Magnesium Sulfite	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Maize Oil	1	1	4	1	1	–	2	–	1	1	1	1	4	4	4
Malathion	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Maleic Acid	4	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Maleic Anhydride	4	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Malic Acid	1	1	4	2	–	–	–	–	1	1	1	1	–	–	–
Margarine	1	1	4	1	1	1	2	1	1	–	–	1	4	4	4
Marsh Gas	1	1	3	2	1	–	1	1	2	2	1	1	2	2	2
MEA	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
MEK	4	4	2	4	4	4	4	4	4	4	2	1	4	2	4

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

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Menthol	4	2	4	–	4	–	4	–	–	–	–	1	4	4	4
Mercaptobenzothiazole	3	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Mercuric Chloride	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Mercury	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mercury Salts	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Mercury Vapor	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Mesityl Oxide	4	4	2	4	–	–	–	–	4	4	4	1	–	2	–
Methacrylic Acid	4	4	2	4	–	–	–	–	4	2	4	1	–	–	–
Methanal	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Methane	1	1	3	2	1	–	1	1	2	2	1	1	2	2	2
Methanecarboxylic Acid	3	4	2	2	4	4	4	–	4	3	2	2	4	2	4
Methanoic Acid	3	4	2	2	4	4	4	–	3	3	4	2	2	2	2
Methanol	2	2	1	2	2	–	2	–	1	1	1	1	1	1	1
Methoxy Butanol	1	1	2	–	1	–	2	–	–	–	–	1	4	2	4
Methyl 2-Pyrrolidone	–	2	2	2	–	–	–	–	2	–	1	1	–	–	–
Methyl Acetate	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Methyl Acetoacetate	4	4	2	2	–	–	–	–	4	4	4	1	–	–	–
Methyl Acrylate	4	4	3	4	4	4	4	4	4	4	4	2	4	4	4
Methyl Alcohol	2	2	1	2	2	–	2	–	1	1	1	1	1	1	1
Methyl Benzene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Methyl Benzoate	4	1	4	4	–	–	–	–	1	2	2	1	–	–	–
Methyl Bromide	3	1	4	4	4	4	4	4	1	2	1	1	4	4	4
Methyl Butanethiol	4	1	4	4	–	–	–	–	–	1	1	1	–	–	–
Methyl Butanol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Methyl Butanone	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Methyl Butyl Ketone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Methyl Carbonate	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Methyl Cellosolve	3	4	2	4	–	–	–	–	4	1	4	1	–	–	–
Methyl Cellulose	2	4	2	2	–	–	–	–	4	1	4	1	–	–	–
Methyl Chloride	4	2	4	4	4	2	4	–	2	4	1	1	4	4	4
Methyl Chloroform	4	2	4	4	–	–	–	–	2	4	2	1	–	–	–
Methyl Chloroformate	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Methyl Ether	3	3	3	1	4	–	4	–	1	4	3	2	2	1	4
Methyl Ethyl Ketone	4	4	2	4	4	4	4	4	4	4	2	1	4	2	4
Methyl Ethyl Ketone Peroxide	4	4	4	2	–	–	–	–	4	–	4	1	–	–	–

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Methyl Formate	4	4	2	–	–	–	–	–	–	4	4	1	–	–	–
Methyl Hydride	1	1	3	2	1	–	1	1	2	2	1	1	2	2	2
Methyl Isobutyl Ketone	4	4	3	4	4	4	4	4	4	4	2	2	4	2	4
Methyl Isopropyl Ketone	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Methyl Methacrylate	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
Methyl Oleate	4	1	2	–	–	–	–	–	2	1	1	1	–	–	–
Methyl Phenol	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Methyl Salicylate	4	–	2	–	–	–	–	–	–	–	–	1	–	–	–
Methyl T-Butyl Ether	3	4	3	–	–	–	–	–	–	2	2	1	–	–	–
Methylamine	4	4	1	–	4	–	–	–	–	–	–	2	2	1	2
Methylcyclopentane	4	1	4	4	–	–	–	–	2	2	2	1	–	–	–
Methylene Bromide	2	1	4	–	–	–	–	–	1	–	1	1	–	–	–
Methylene Chloride	4	2	4	4	4	4	4	4	2	–	2	1	4	4	4
Methylene Chlorobromide	4	1	2	4	–	–	–	–	2	3	1	1	–	–	–
Methylpropylbenzene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
MIBK	4	4	3	4	4	4	4	4	4	4	2	2	4	2	4
Milk	1	1	2	1	1	1	1	–	1	–	–	1	2	2	2
Milk of Lime	4	1	–	–	4	–	2	–	–	–	–	1	4	–	2
Mineral Oils	1	1	4	2	1	2	4	1	1	1	1	1	4	4	4
Mineral Water	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Mixed Acid Etchants	4	3	4	4	–	–	–	–	4	3	2	1	–	–	–
Molasses	1	1	2	–	1	–	2	–	–	–	–	1	4	2	4
Molybdenum Disulfide Grease	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Monobromobenzene	4	2	4	4	4	4	4	4	4	–	–	1	4	4	4
Monochloracetic Acid	3	4	2	–	2	4	2	–	4	2	4	2	4	1	4
Monochloracetic Acid, Ethyl Ester	4	2	2	4	4	4	4	4	4	–	–	1	4	2	4
Monochloracetic Acid, Methyl Ester	4	2	1	4	4	4	4	4	4	–	–	1	4	1	4
Monochlorodifluoromethane	4	4	2	4	4	2	1	–	3	–	4	1	1	1	1
Monoethanolamine	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
Monomethyl Hydrazine	2	4	1	4	–	–	–	–	–	2	4	2	–	–	–
Monomethylaniline	4	2	4	–	–	–	–	–	–	2	2	1	–	–	–
Monovinyl Acetylene	1	1	1	2	–	–	–	–	–	3	1	1	–	–	–
Mopar Brake Fluid	3	4	1	3	–	–	–	–	4	1	4	1	–	–	–
Morpholine	4	–	2	–	4	–	4	–	–	–	–	–	4	2	4
Muriatic Acid	1	1	1	–	2	4	2	–	–	–	–	1	1	1	1

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Myristyl Alcohol	1	1	1	–	1	–	1	1	–	–	–	1	1	1	1
Naftolen ZD	2	1	4	–	2	–	4	–	–	–	–	1	4	4	4
Naphtha	3	1	4	4	4	4	4	2	2	2	1	1	–	–	–
Naphthalene	4	1	4	4	4	–	4	–	1	3	1	1	4	4	4
Naphthenic Acid	2	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Naphthoic Acid	2	1	–	–	2	–	–	–	1	–	–	1	–	–	–
Natural Gas	1	1	4	2	1	2	1	–	4	1	1	1	4	–	4
Neatsfoot Oil	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Neon	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Neville Acid	4	1	2	4	–	–	–	–	2	1	1	1	–	–	–
Nickel Acetate	2	4	1	4	1	4	2	–	4	4	4	2	1	1	1
Nickel Ammonium Sulfate	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Nickel Chloride	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Nickel Sulfate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Niter	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Nitric Acid, 0–50%	3	1	3	2	2	–	2	–	2	2	1	1	4	2	2
Nitric Acid, 50–100%	4	2	4	4	–	–	–	–	4	3	2	1	–	–	–
Nitric Acid, Concentrated	4	4	4	–	4	4	4	–	–	–	–	–	4	4	4
Nitric Acid, Red Fuming	4	3	4	4	–	–	–	–	4	3	2	1	–	–	–
Nitric Acid, White Fuming	4	4	4	–	4	4	4	–	–	–	–	–	4	4	4
Nitrobenzene	4	3	4	4	4	4	4	4	4	1	2	2	4	4	4
Nitroethane	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Nitrogen	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1
Nitrogen Dioxide	4	4	4	4	–	–	–	–	4	3	4	2	–	4	–
Nitrogen Tetroxide	4	4	4	4	–	–	–	–	4	3	4	2	–	4	–
Nitroglycerine	4	1	1	–	4	–	–	–	–	–	–	1	2	1	2
Nitroglycol	4	1	1	–	4	–	2	–	–	–	–	1	–	1	–
Nitrohydrochloric Acid	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Nitromethane	4	4	2	4	4	4	–	4	4	3	4	2	2	2	2
Nitromuriatic Acid	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Nitropropane	4	4	2	4	4	4	4	4	4	2	4	1	2	2	2
Nitrotoluene, Ortho	4	4	4	4	4	–	4	4	4	–	–	–	4	4	4
Nitrous Gases	4	1	1	4	4	4	4	4	4	–	–	1	4	1	4
Nitrous Oxide	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1
Norway Saltpeter	1	3	1	2	1	–	2	–	–	1	1	1	4	1	1

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Octachlorotoluene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Octadecane	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Octafluorocyclobutane	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
Octane	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Octyl Alcohol	2	1	1	2	2	–	1	–	2	1	1	1	2	1	2
Octyl Cresol	–	2	4	4	–	–	4	4	4	–	–	2	4	4	4
Oil of Turpentine	2	1	4	–	2	–	4	–	–	–	–	1	4	4	4
Oleic Acid	2	2	4	3	1	–	2	1	2	1	2	1	4	4	4
Oleum	4	1	3	4	4	4	4	4	3	1	1	1	4	2	4
Oleyl Alcohol	1	1	1	1	1	4	1	1	1	–	–	1	1	1	1
Olive Oil	1	1	2	2	1	–	1	1	1	1	1	1	2	2	2
Orthoarsenic Acid	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Orthochloroethyl Benzene	4	1	4	4	–	–	–	–	2	4	1	1	–	–	–
Oxalic Acid	3	1	1	2	4	–	4	–	1	1	1	1	4	1	2
Oxygen, Hot	4	3	4	2	–	–	–	–	1	4	3	1	–	–	–
Oxygen, Liquid	4	4	4	–	–	–	–	–	–	4	4	2	–	–	–
Ozonated Deionized Water	–	1	2	–	–	–	–	–	–	–	2	1	–	–	–
Ozone	4	1	1	1	2	–	2	2	1	1	1	1	4	2	4
Paint Thinner	4	2	4	4	–	–	–	–	2	3	2	1	–	–	–
Palm Kernel Fatty Acid	1	1	4	–	1	–	1	–	–	–	–	1	4	4	4
Palmitic Acid	2	1	3	4	2	–	2	–	1	1	1	1	4	4	4
Paper Makers Alum	1	1	1	–	1	–	1	–	–	–	–	1	4	1	1
Paraffin Emulsions	1	1	4	1	1	1	1	1	1	–	–	1	4	4	4
Paraffin Oil	1	1	4	1	1	1	1	1	1	–	–	1	4	4	4
Paraffins	1	1	4	–	1	–	1	–	–	–	–	1	4	4	4
Par-Al-Ketone	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Peanut Oil	1	1	3	1	–	–	–	–	1	1	1	1	–	–	–
Pearl Ash	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Pectin	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Pentachlorodiphenyl	4	–	4	–	4	–	4	–	–	–	–	–	4	4	4
Pentaerythritol	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Pentamethylene Amine	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Pentane	1	1	4	4	1	–	2	–	3	–	–	1	4	4	4
Pentanedione-2,4	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Pentanol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Pentasol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Peracetic Acid, < 1%	4	1	1	4	4	4	4	4	4	–	–	1	4	4	4
Peracetic Acid, < 10%	4	–	2	4	4	4	4	4	4	–	–	1	4	4	4
Perchloric Acid	4	1	2	4	4	–	4	–	1	1	1	1	4	1	4
Perchloroethylene	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Perchloromethane	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Petrol	2	1	4	4	2	1	2	2	1	–	–	1	4	4	4
Petrol/Benzene Mixture, 50/50%	4	1	4	4	4	2	4	4	2	–	–	1	4	4	4
Petrol/Benzene Mixture, 60/40%	4	1	4	4	4	2	4	4	2	–	–	1	4	4	4
Petrol/Benzene Mixture, 70/30%	2	1	4	4	4	1	4	2	1	–	–	1	4	4	4
Petrol/Benzene Mixture, 80/20%	2	1	4	4	4	1	4	2	1	–	–	1	4	4	4
Petrol/Benzene/Ethanol, 50/30/20%	4	–	4	4	4	4	4	4	2	–	–	1	4	4	4
Petrolatum	1	1	4	4	–	–	–	–	1	–	–	1	–	–	–
Petroleum < 121°C/250°F	1	1	4	2	1	1	2	1	2	1	1	1	4	4	4
Petroleum > 121°C/250°F	3	2	4	3	1	1	2	1	3	2	2	1	4	4	4
Petroleum Asphalt	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Petroleum Ether	1	1	4	2	2	1	2	1	1	–	–	1	4	4	4
Petroleum Oil, Crude	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Phenetole	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
Phenol	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Phenol Sulfonic Acid	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–
Phenol, 85%	4	2	4	–	4	–	4	–	–	–	–	1	4	4	4
Phenolsulfonic Acid	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–
Phenyl Benzene	4	1	4	4	4	–	4	–	2	3	1	1	4	4	4
Phenyl Bromide	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Phenyl Chloride	4	2	4	4	4	–	4	4	3	–	1	2	4	4	4
Phenyl Ether	4	1	4	3	–	–	–	–	2	2	1	1	–	–	–
Phenyl Ethyl Ether	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
Phenyl Fluoride	4	2	4	4	4	–	4	4	3	–	1	1	4	4	4
Phenyl Hydrazine	2	2	4	–	2	–	4	–	–	–	–	1	4	4	4
Phenyl Methyl Ketone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Phenylamine	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Phenylbenzene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Phenylenediamine	–	4	–	–	–	–	–	–	–	–	–	1	–	–	–
Phenylethane	4	2	4	4	4	–	4	4	2	3	1	1	4	4	4

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CHEMICAL/ELASTOMER LISTINGS

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Phenylethyl Ether	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Phenylethylene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Phenylhydrazine	4	1	4	4	–	–	–	–	–	1	1	1	–	–	–
Phenylhydrazine Chlorhydrate	2	2	1	–	2	–	4	–	–	–	–	2	4	1	4
Phenylsulfonic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Phorone	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Phosphine	4	2	1	–	4	–	2	–	–	–	–	2	1	1	–
Phosphoric Acid, 20%	4	1	1	3	4	–	2	–	2	1	1	1	2	1	1
Phosphoric Acid, 80%	4	1	1	4	–	–	–	–	3	1	1	1	–	–	–
Phosphorous Chloride	4	2	1	–	4	–	4	–	1	1	1	2	1	1	–
Phosphorous Oxychloride	4	–	–	–	4	–	–	–	–	–	–	–	–	–	–
Phosphorous Trichloride	4	2	1	–	4	–	4	–	1	1	1	2	1	1	–
Photographic Developer	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Photographic Emulsions	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Photographic Fixing Baths	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Phthalic Acid	1	1	1	–	1	–	2	–	–	–	–	1	4	1	–
Phthalic Anhydride	3	4	2	–	–	–	–	–	–	3	4	1	–	–	–
Pickling Solution	4	2	3	4	–	–	–	–	4	2	2	2	–	2	–
Picric Acid	2	1	2	4	2	2	1	–	2	–	1	1	2	2	2
Picric Acid, Aqueous	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Pine Needle Oil	2	1	4	2	2	1	4	1	1	–	–	1	4	4	4
Pine Oil	1	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Pinene	2	1	4	4	2	2	2	–	2	1	1	1	–	–	–
Piperidine	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Plating Solution, Chrome	4	1	2	4	–	–	–	–	2	1	1	1	–	–	–
Plating Solution, Others	1	1	1	4	–	–	–	–	–	1	1	1	–	–	–
Polyethylene Glycol	2	3	1	–	–	–	–	–	–	1	3	1	–	–	–
Polyvinyl Acetate Emulsion	1	3	1	–	–	–	–	–	–	1	3	1	–	–	–
Portland Cement	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Potash	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Potash Muriate	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Acetate	2	3	1	4	2	2	2	–	4	–	4	1	1	1	1
Potassium Acid Sulfate	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Bichromate	2	1	1	1	2	–	2	–	1	1	1	1	4	1	2
Potassium Bisulfate	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

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Potassium Borate, Aqueous	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Bromate, 10%	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Bromide	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Carbonate	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Potassium Chlorate	4	1	1	–	4	4	2	–	–	–	–	1	2	1	2
Potassium Chloride	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Chromate	2	1	1	–	2	4	2	–	–	–	–	1	1	1	1
Potassium Copper Cyanide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Potassium Cyanide	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Potassium Dichromate	2	1	1	1	2	–	2	–	1	1	1	1	4	1	2
Potassium Hydrate	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Potassium Hydrogen Sulfate	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Hydroxide	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Potassium Iodide	1	1	1	–	1	4	2	–	–	–	–	1	2	1	1
Potassium Muriate	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Nitrate	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Perchlorate	4	1	1	–	4	–	2	–	–	–	–	1	4	1	4
Potassium Permanganate	4	2	1	–	4	–	2	–	–	–	–	1	4	1	2
Potassium Persulfate	4	1	1	–	4	–	4	–	–	–	–	1	4	1	2
Potassium Sulfate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Potassium Sulfite	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Potassium, Molten	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–
Prestone Antifreeze	1	1	1	1	–	–	–	–	1	2	1	1	–	–	–
Producer Gas	1	1	4	2	–	–	–	–	2	1	1	1	–	–	–
Propane	1	1	4	3	1	1	1	1	2	1	1	1	4	–	4
Propanediol	1	1	1	–	1	–	2	–	–	1	1	1	1	1	1
Propanol	2	2	1	1	2	4	2	–	1	1	1	1	1	1	1
Propargyl Alcohol	1	1	1	–	1	–	1	–	–	–	–	1	2	1	–
Propene	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Propenenitrile	4	4	4	4	4	–	4	–	4	2	3	1	4	4	4
Propenyl Alcohol	2	4	1	–	2	4	2	–	–	–	–	1	1	1	1
Propionic Acid	1	1	–	–	1	–	2	–	–	–	–	1	–	–	–
Propyl Acetate	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Propyl Alcohol	2	1	1	1	2	–	2	4	2	1	1	1	1	1	1
Propyl Nitrate	4	1	2	4	–	–	–	–	4	–	1	1	–	–	–

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Propyl Propionate	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Propylacetone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Propylene	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Propylene Glycol	1	1	1	–	1	–	2	–	–	1	1	1	1	1	1
Propylene Oxide	4	4	2	4	4	–	–	–	4	4	4	2	–	–	–
Propylformic Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Pyranol Transformer Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Pyridine	4	4	2	4	4	4	4	4	4	2	4	1	4	–	4
Pyroligneous Acid	4	4	2	–	–	–	–	–	4	4	4	1	–	–	–
Pyrrole	4	4	4	2	–	–	–	–	3	–	4	1	4	4	4
Quicksilver	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Radiation, Gamma, 1.0 E+07 Rads	3	4	1	2	–	–	–	–	4	1	4	2	–	–	–
Rapeseed Oil	2	1	2	4	2	2	2	2	1	1	1	1	–	2	–
Ricinus Oil	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Sagrotan	2	1	1	1	2	4	2	–	1	–	–	1	1	1	1
Sal Ammoniac	1	1	1	2	1	4	2	–	1	1	1	1	1	1	1
Salicylic Acid	2	1	1	–	1	1	1	–	1	1	1	1	1	1	1
Salt Water	1	2	1	1	1	–	1	–	1	1	1	1	1	1	1
Sea Water	1	1	1	1	1	2	2	–	1	–	–	1	1	1	1
Sewage	1	2	1	1	–	–	–	–	1	1	2	1	–	–	–
Silicate Esters	2	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Silicic Acid, Aqueous	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Silicone Greases	1	1	1	4	1	1	1	1	1	–	–	1	2	1	1
Silicone Oils	1	1	1	4	1	1	1	1	1	1	1	1	2	1	1
Silver Nitrate	2	1	1	1	2	–	2	–	1	1	1	1	–	1	2
Silver Salts, Aqueous	2	1	1	1	2	–	2	–	1	–	–	1	2	1	2
Slaked Lime	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Soap Solutions	1	2	1	1	1	1	2	–	1	1	1	1	1	1	1
Soda Ash	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Soda, Aqueous	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Sodium Acetate	2	4	1	4	–	–	–	–	4	2	4	1	–	–	–
Sodium Acid Sulfite	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Benzoate	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Sodium Bicarbonate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Bisulfate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Sodium Bisulfite	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Borate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Carbonate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Chlorate	4	1	1	–	4	–	4	–	–	–	–	1	4	1	4
Sodium Chloride	1	1	1	1	1	–	2	–	1	1	1	1	–	1	1
Sodium Cyanide	1	2	1	1	–	–	–	–	1	1	2	1	–	–	–
Sodium Dioxide	2	1	1	4	–	–	–	–	1	1	1	1	–	–	–
Sodium Hydrogen Sulfite	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Hydroxide	2	4	1	3	2	–	2	4	3	1	3	1	2	1	2
Sodium Hypochlorite	2	1	2	2	2	–	2	–	2	1	1	1	4	1	4
Sodium Metaphosphate	1	1	1	–	–	–	–	–	1	1	1	1	–	–	–
Sodium Nitrate	2	1	1	4	1	–	2	–	–	1	1	1	1	1	1
Sodium Nitrite	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Sodium Perborate	2	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Sodium Peroxide	2	1	1	4	–	–	–	–	1	1	1	1	–	–	–
Sodium Phosphate, Dibasic	1	1	1	4	1	–	2	–	–	1	1	1	1	1	1
Sodium Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Silicate	1	1	1	–	1	–	2	–	–	1	1	1	1	1	1
Sodium Sulfate	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Sodium Sulfate Decahydrate	4	1	2	–	1	–	2	2	1	1	1	1	1	1	1
Sodium Sulfate, Anhydrous	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Sodium Sulfide	2	1	1	–	2	–	2	–	–	–	–	1	4	2	2
Sodium Sulfite	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Superoxide	2	1	1	4	–	–	–	–	1	1	1	1	–	–	–
Sodium Thiosulfate	3	1	1	1	4	–	1	–	1	–	1	1	1	1	1
Sodium Tripolyphosphate	4	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Sodium, Molten	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–
Sour Crude Oil	3	1	4	4	–	–	–	–	4	–	1	1	–	–	–
Sour Natural Gas	3	1	4	4	–	–	–	–	4	–	1	1	–	–	–
Soybean Oil	1	1	3	1	–	–	–	–	1	1	1	1	–	–	–
Stannic Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Stannous Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Starch Syrup	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Starch, Aqueous	1	1	1	1	1	–	1	–	1	–	–	1	1	1	1
Steam < 149°C/300°F	4	2	1	3	–	–	–	–	4	2	2	1	–	–	–

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Steam > 149°C/300°F	4	4	4	4	–	–	–	–	4	3	3	2	–	–	–
Stearic Acid	2	2	2	2	1	1	2	1	1	1	2	1	4	1	1
Stoddard Solvent	1	1	4	4	1	1	4	1	1	2	1	1	–	–	–
Styrene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Succinic Acid	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Sucrose Solutions	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Sugar Syrup	1	1	1	–	1	–	–	–	–	–	–	1	1	1	–
Sulfite Liquors	2	1	2	4	–	–	–	–	2	–	1	1	–	–	–
Sulfolane	2	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Sulfur	–	1	1	–	–	–	–	–	–	–	–	1	–	1	–
Sulfur Chloride	4	1	4	3	4	–	4	–	1	1	1	1	–	–	–
Sulfur Dioxide, Aqueous	4	3	1	2	4	–	4	–	2	2	2	1	4	1	2
Sulfur Dioxide, Liquefied	4	1	1	–	4	–	4	–	–	–	–	1	4	1	–
Sulfur Hexafluoride	2	2	1	2	1	–	1	–	2	3	3	2	–	1	1
Sulfur Trioxide	4	1	2	2	–	–	–	–	2	2	1	1	–	–	–
Sulfur, Molten	4	1	3	3	–	–	–	–	1	1	1	1	–	–	–
Sulfuric Acid	2	1	1	–	2	–	4	–	–	–	–	1	2	1	2
Sulfuric Acid, Concentrated Room Temp	4	1	3	4	4	4	4	–	4	4	1	1	4	1	2
Sulfurous Acid	2	3	2	4	–	–	–	–	–	1	1	1	–	–	–
Sulfuryl Chloride	4	1	2	–	4	–	4	–	–	–	–	1	2	2	2
Super Shell Gasoline	1	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Tallow	1	1	4	–	1	–	2	–	–	–	–	1	4	4	4
Tannic Acid	1	1	1	2	1	–	2	2	1	1	1	1	1	1	1
Tanning Extract	1	1	1	1	1	–	2	2	1	–	–	1	1	1	1
Tar Oil	4	–	4	–	4	–	4	–	–	–	–	1	4	4	4
Tar, Bituminous	3	1	4	2	4	–	4	–	1	1	1	1	4	4	4
Tartaric Acid	1	1	2	1	1	–	2	–	1	1	1	1	1	1	1
T-Butyl Alcohol	2	1	2	2	–	–	–	–	2	1	1	1	–	–	–
T-Butyl Mercaptan	4	1	4	4	–	–	–	–	–	1	1	1	–	–	–
T-Butylcatechol	4	1	2	–	–	–	–	–	1	1	1	1	–	–	–
TCP	4	2	2	3	4	2	4	0	2	1	1	1	4	2	4
Terpineol	2	1	3	–	–	–	–	–	1	1	1	1	–	–	–
Tetrabromomethane	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Tetrabutyl Titanate	2	1	1	4	–	–	–	–	4	1	1	1	–	–	–
Tetrachlorodifluoroethane	2	1	4	4	–	–	–	–	2	4	1	2	–	–	–

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Tetrachloroethane	4	2	4	–	4	–	4	–	2	4	1	1	4	4	4
Tetrachloroethylene	3	2	4	4	4	–	4	–	2	4	1	1	4	4	4
Tetrachloromethane	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Tetraethyl Lead	2	1	4	–	2	–	4	–	2	3	1	1	–	–	–
Tetraethylorthosilicate	1	1	1	4	–	–	–	–	1	–	1	1	–	–	–
Tetrafluoromethane	1	1	1	4	–	–	–	–	–	–	1	1	–	–	–
Tetrahydrofuran	4	4	4	4	4	–	4	–	4	4	3	2	4	4	4
Tetrahydronaphthalene	4	1	4	4	4	–	4	–	1	4	1	1	4	4	4
Thionyl Chloride	4	2	2	–	4	–	4	–	–	–	2	1	2	1	2
Thiophene	4	4	4	–	4	–	4	–	–	–	–	–	4	4	4
Tin Chloride	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Titanium Tetrachloride	2	2	3	3	1	1	2	2	2	2	1	2	1	1	1
Toluene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Toluene Diisocyanate	4	3	2	4	–	–	–	–	4	4	1	1	–	–	–
Transformer Oil	1	1	4	2	2	1	4	1	1	1	1	1	4	4	4
Transmission Fluid, Type A	1	1	4	2	1	1	2	1	1	1	1	1	–	–	–
Triacetin	2	4	1	–	2	–	2	–	4	4	4	1	2	1	4
Triallyl Phosphate	4	1	1	3	–	–	–	–	2	1	1	1	–	–	–
Tributoxyethyl Phosphate	4	2	3	–	4	–	4	–	2	1	1	1	4	4	4
Tributyl Mercaptan	4	1	4	4	–	–	–	–	3	–	1	1	–	–	–
Tributyl Phosphate	4	3	3	4	4	4	4	–	4	2	4	1	4	4	4
Trichloroacetic Acid	2	4	2	–	2	–	4	–	4	3	3	1	2	2	2
Trichloroethane	4	2	4	4	–	–	–	–	2	4	2	1	–	–	–
Trichloroethyl Phosphate	4	4	–	–	4	–	4	–	–	–	–	2	–	–	–
Trichloroethylene	4	2	4	4	4	4	4	–	3	4	1	2	4	4	4
Trichlorofluoromethane	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
Trichloromethane	4	2	4	4	4	4	4	–	3	4	1	1	4	4	4
Trichlorotrifluoroethane	2	2	4	4	2	2	1	–	4	4	2	2	–	–	–
Tricresyl Phosphate	4	2	2	3	4	2	4	–	2	1	1	1	4	2	4
Triethanolamine	4	4	2	–	4	–	2	–	4	1	4	2	4	2	–
Triethyl Aluminum	4	3	3	–	–	–	–	–	–	–	2	2	–	–	–
Triethyl Borane	4	1	3	–	–	–	–	–	–	–	1	1	–	–	–
Trifluoroethane	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Triglycol	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Triiodomethane	–	1	1	–	–	–	–	–	–	–	–	1	–	1	–

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Trimethylolpropane	4	1	2	–	4	–	2	–	–	–	–	1	2	2	–
Trinitrophenol	2	1	2	4	2	2	1	–	2	–	1	1	2	2	2
Trinitrotoluene	4	2	4	–	–	–	2	–	2	2	2	1	–	–	–
Trioctyl Phosphate	4	2	2	3	4	–	4	–	2	1	2	1	4	2	–
Trisodium Phosphate	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Tritolyl Phosphate	4	2	2	3	4	2	4	0	2	1	1	1	4	2	4
Tung Oil	1	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Turpentine	2	1	4	4	2	4	4	–	2	1	1	1	4	4	4
Ultra Pure Deionized Water	–	1	2	–	–	–	–	–	–	2	2	1	–	–	–
Unsymmetrical Dimethyl Hydrazine	2	4	1	4	–	–	–	–	4	3	4	2	–	–	–
Urea	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Varnish	2	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Vaseline	1	1	4	2	1	–	1	1	1	–	–	1	4	4	4
Vaseline Oil	1	1	4	2	1	–	1	1	1	–	–	1	4	4	4
Vegetable Oils	1	1	3	1	–	–	–	–	1	1	1	1	–	–	–
Vinegar	2	2	1	3	–	–	–	–	3	–	1	1	–	–	–
Vinegar Acid	3	4	2	2	4	4	4	–	4	3	2	2	4	2	4
Vinegar Naphtha	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Vinegar Salts	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Vinyl Acetate	4	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Vinyl Acetylene	1	1	1	2	–	–	–	–	–	3	1	1	–	–	–
Vinyl Chloride	4	1	4	–	–	–	–	–	–	–	1	2	–	–	–
Vinyl Cyanide	4	4	4	4	4	–	4	–	4	2	3	1	4	4	4
Vinyl Fluoride	–	2	–	–	–	–	–	–	–	–	1	1	–	–	–
Vinylbenzene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Water	1	1	1	2	1	4	2	4	1	1	1	1	2	1	1
Wax Alcohol	1	1	4	–	2	–	2	–	–	–	–	1	4	4	–
Whiskey	1	1	1	1	1	1	1	–	1	1	1	1	1	1	1
White Lye	2	4	1	–	2	–	2	–	–	–	–	2	4	1	1
White Oil	1	1	–	1	1	–	2	1	1	–	–	1	–	–	–
White Pine Oil	2	1	4	4	–	–	–	–	1	1	1	1	–	–	–
White Spirit	1	1	4	–	2	–	2	1	–	–	–	1	4	4	4
Wine	1	1	1	1	1	1	1	–	1	1	1	1	1	1	1
Winthers Acid	4	1	2	4	–	–	–	–	2	1	1	1	–	–	–
Wolmar Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–

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Wool Fat	1	1	1	1	1	1	1	1	1	–	–	1	2	1	1
Xenon	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Xylamon, Wood Preservative	4	2	4	–	4	2	4	4	–	–	–	1	4	4	4
Xylene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Xylidine	3	4	4	4	–	–	–	–	4	2	3	1	–	–	–
Xylol	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Yeast, Aqueous	1	1	1	1	1	–	1	–	1	–	–	1	1	1	1
Zeolites	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Zinc Acetate	2	3	1	3	2	1	2	1	3	3	4	1	1	1	4
Zinc Chloride	2	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Zinc Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Zinc Sulfate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–

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