

Sealing Materials Technical Data



Never operate DMIC Ball Valves outside the temperature range published below for your selected Thermoplastic & Elastomer materials, even if the combination is approved in the Media Acceptability Table (next page). You may experience valve leakage or failure, and will void the warranty.

Order Code	DMIC Description	Temperature Range		Seal Compound Identification	Acronym	Classification Synthesis	Trade Names	Chemical Resistance Examples	
		°F	°C					Suitable	Not Suitable
Ball Seal Materials (Digit 3)									
1	Delrin™	-40°F to 180°F	-40°C to 82°C	Delrin™ Polyoxymethylene	DM POM	Thermoplastic Saturated heteropolymer of heterogeneous polymer chains	Delrin™	Hydraulic Fluids Water Inert Gases Air Alcohols Glycols Petroleum based fluids	High molar acids & Alkalis Fluorines Liquids for human consumption
2	PTFE Teflon™	-300°F to 450°F	-184°C to 232°C	Polytetra fluoroethylene	PTFE	Thermoplastic Homogeneous, pure polymer chains, containing fluorine	Teflon™ Hostaflon Fluon	Foodstuffs Acids & Alkalis Organic & Inorganic Solvents	Fluorines Liquid alkali metals
4	PEEK Hi-Temp	-76°F to 480°F	-60°C to 248°C	Polyether-ether-ketone	PEEK	Thermoplastic Aromatic Linear Polymer	Victrex	Most fluids acceptable with Delrin™ Moly Radioactive use	High molar acids & alkalis
6	Delrin™ AF Low Friction	-40°F to 180°F	-40°C to 82°C	Proprietary	PAI	Thermoplastic Combination of Teflon™ fibers uniformly dispersed in Delrin™ acetal resin.	Delrin™ AF	Hydraulic fluids Many acids Alcohols & organic solvents	Hot water Steam, Strong alkalis
9	Ferrous Special Applications	Call DMIC						Call DMIC	
O-Ring & Backup Seal Materials (Digit 4)									
1	Buna-N	-40°F to 200°F	-40°C to 93°C	Nitrile Butadiene rubber	NBR	Elastomer Unsaturated heteropolymer of heterogeneous polymer chains	Nitrile Perbunan Chemigum Elaprim Krynac	Petroleum based fluids Water Air Water-glycol	Phosphate esters
2	EPR	-70°F to 302°F	-57°C to 150°C	Ethylene-propylene-diene rubber	EPR EPDM	Elastomer Saturated heteropolymer utilizing double valence bands outside the primary chain	Buna AP Dutral Epcar Keltran Nordel	Phosphate esters Brake Fluid Acids & Alkalis	Petroleum based oil & grease Chlorinated hydrocarbons
3	Viton™	-15°F to 400°F	-26°C to 204°C	Fluorocarbon	FKM	Elastomer Multiple monomers & fluorine compounded into saturated heteropolymer	Viton™ Fluorel Technoflon	NBR compatible fluids Acids & alkalis	Phosphate esters
4	Teflon™ PTFE	-300°F to 450°F	-184°C to 232°C	Polytetrafluoroethylene	PTFE	Thermoplast Homogeneous, pure polymer chains, containing fluorine.	Teflon™ Hostaflon Fluon	Foodstuffs Organic & Inorganic Solvents	Fluorines Liquid alkali metals
5	Chemraz™ 510	-22°F to 446°F	-30°C to 230°C	Proprietary	FFKM	Perfluorolastomer Polymers of three or more monomers in which all hydrogen positions have been replaced with fluorine	Chemraz™	Acids Caustics Aldehydes Esters Aromatics Methanol	Fluorinated Refrigerants Perfluorinated Lubricants

These are the main o-ring seal materials that DMIC uses. As always, if you would like another material to use for your application, call DMIC Sales. We would be more than happy to get the material you are requesting. For lower pressures (<1500 PSI) and vacuum, DMIC's softer PTFE Teflon™ Ball Seals are recommended.

In the BOM views for all valves, colors may have been changed for clarity.

This information provided as is, for reference purposes only. DMIC makes no guarantee as to the accuracy of this information. In the event of misapplication, the entire responsibility rests with the user. Verify your selection with your system's seal manufacturer for a final authority.



Seal Compound to Media Compatibility Table

This media compatibility table is provided for your reference as an **INDICATION** of acceptable usage. Please bear in mind that DMIC relies upon suppliers of seal raw materials and premium brand O-Rings for much of this information and it is advised that you consult your system's seal supplier if there is any question or doubt. The seal manufacturer's data shall be considered a final authority in case of discrepancy.

Fluid	Buna-N	EPR	Viton™	Teflon™ PTFE	Chemraz™ 510
Acetaldehyde	U	R	X	R	-
Acetamide	R	R	U	R	R
Acetic Acid, 5%	M	R	R	R	M
Acetone	U	R	X	R	R
Acetophenone	U	R	X	R	R
Acetylene	R	R	R	R	R
Acetylsalicylic Acid	M	X	R	-	R
Acrolein	U	R	U	-	R
Acrylic Acid	M	X	R	-	R
Air, Below 200°F	M	R	R	R	R
Air, 200°-300°F	U	M	R	R	R
Air, 300°-400°F	X	X	R	R	R
Air, 400°-500°F	X	X	U	R	M
Aluminum Hydroxide	M	R	M	-	R
Aluminum Nitrate	R	R	R	R	R
Ammonia	R	R	X	R	R
Ammonium Sulfate	R	R	X	R	R
Ammonium Sulfide	R	R	X	-	R
Ammonium Sulfite	U	R	U	-	R
Amyl Acetate	U	M	X	R	R
Anderol L-774	M	U	R	-	R
Antifreeze	R	R	U	-	R
Aniline	U	R	U	R	R
Ansul Ether	M	M	X	-	R
Argon	R	R	R	R	R
Aroclors	M	R	R	R	R
Askarel	R	U	R	R	R
Asphalt	M	X	R	-	R
ASTM #1	R	U	R	R	R
ASTM #3	R	U	R	R	R
ASTM Fuel A	R	U	R	R	R
ASTM Fuel B	R	U	R	R	R
ASTM Fuel C	R	U	R	R	R
ASTM Fuel D	M	U	R	R	R
Auto Transmission Fluid	R	U	R	R	R
Benzaldehyde	R	R	X	R	M
Benzene	U	R	R	R	R
Benzoic Acid	U	U	R	R	R
Benzophenone	-	R	R	-	R
Bezyl Alcohol	U	R	R	R	R
Bleach	R	R	R	R	R
Borax	R	U	R	-	R

Fluid	Buna-N	EPR	Viton™	Teflon™ PTFE	Chemraz™ 510
Boric Acid	R	R	R	R	R
Brake Fluid DOT 3 & 4	U	R	X	-	R
Brake Fluid DOT 5	M	R	R	-	R
Bromine	U	R	R	R	R
Bromobenzene	U	U	R	R	R
Bunker	R	U	R	R	R
Butane	R	R	R	R	R
Butyl Acetate	U	U	X	R	R
Butyl Alcohol	R	R	R	R	R
Butyl Amine	M	U	X	-	R
Butyl Carbitol	U	M	U	R	R
Butyl Cellosolve	M	M	X	-	R
Butylaldehyde	U	U	X	X	R
Carbitol	R	R	M	R	R
Carbon Disulfide	U	U	R	R	R
Carbon Tetrachloride	R	U	R	R	R
Carbonic Acid	M	R	R	R	R
Castor Oil	R	M	R	R	R
Cellosolve	X	M	X	R	R
Chassis Grease	R	M	R	R	R
Chloric Acid	U	R	U	-	R
Chloroacetone	X	M	X	-	R
Chlordane	M	X	R	-	R
Chlorine, Dry	M	X	R	R	M
Chloroform	X	X	R	R	R
Chromic Acid	X	M	R	R	M
Citric Acid	R	R	R	R	R
Cod Liver Oil	R	R	R	R	R
Coffee	R	R	R	-	R
Corn Oil	R	U	R	R	R
Creosote, Coal Tar or Wood	R	X	R	R	R
Creosylic Acid	X	X	R	-	R
Crude Oil	M	X	R	R	R
Cyclohexane	R	X	R	R	R
Cyclohexanol	R	X	R	-	R
Decalin	X	X	R	R	R
Denatured Alcohol	R	R	R	-	R
Diacetone	X	R	X	R	R
Dialkyl Sulfates	U	R	U	-	R
Dibutyl Phthalate	X	M	U	R	R
Dichloro Aniline	U	R	U	-	R
Dichloro Butane	M	X	R	R	R

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Media Compatibility Table, cont.

~ Legend ~

- R..... Recommended**
- M Marginal**
- U..... Doubtful**
- X..... Not Recommended**
- Insufficient Data**

Fluid	Buna-N	EPR	Viton™	Teflon™ PTFE	Chemraz™ 510
Diesel Oil	R	X	R	R	R
Diethylamine	M	R	X	R	R
Diethyl Benzene	-	-	R	R	R
Diethylene Glycol	R	R	R	R	R
Dimrthyl Ether	R	M	M	R	R
Dimethyl Formamid	M	R	X	R	M
Dimethyl Terephth	M	X	R	-	R
Diocetyl Phthalate	X	M	M	-	R
Dioxane	X	M	X	R	R
Diphenyl	X	X	R	R	R
Dow Corning 550	M	R	R	R	R
Dow Guard	R	R	R	-	R
Dowtherm A&E	X	X	R	R	R
Elco 28	R	X	R	-	R
Epoxy Resins	-	R	X	-	R
Ethane	R	X	R	R	R
Ethanol	U	R	U	R	R
Ethanolamine	M	R	X	-	R
Ethyl Acetate	X	M	X	R	R
Ethyl Benzene	X	X	R	R	R
Ethyl Cellulose	M	M	X	R	R
Ethyl Chloride	R	U	R	R	R
Ethyl Ether	U	U	X	R	R
Ethyl Formate	X	M	R	R	U
Ethyl Hexanol	R	R	R	R	R
Ethyl Mercaptan	X	-	M	R	R
Ethylene Chloride	X	X	M	R	R
Ethylene Oxide	X	U	X	R	U
Formaldehyde	U	M	X	R	R
Formic Acid	-	R	X	R	R
Freon 12	M	U	U	R	M
Fuel Oil #6	M	X	R	R	R
Furan	X	U	R	R	R
Furfural	X	M	X	R	M
Furfuyl Alcohol	X	M	-	R	R
Fyrquel EHC	U	R	R	-	-
Gallic Acid	M	M	R	R	R
Gasoline	R	X	R	R	R
Gelatin	R	R	R	R	R
Glucose	R	R	R	R	R
Glycerine	R	R	R	R	R
Helium	R	R	R	R	R

Fluid	Buna-N	EPR	Viton™	Teflon™ PTFE	Chemraz™ 510
Hexaldehydee	X	R	X	-	R
Hexane	R	X	R	R	R
Hydazine	M	R	X	R	M
Hydrochloric Acid, Concentrated @ Room Temp.	M	M	R	R	R
Iso Octane	R	X	R	R	R
Iso Phorone	X	M	X	-	R
Isopropanol	M	R	R	R	R
Isopropyl Acetate	X	M	R	R	R
JP-4(MIL-J5624)	R	X	R	R	R
JP-5(MIL-5624)	R	X	R	R	R
Kerosene	R	X	R	R	R
Lactic Acid, Hot	X	X	R	R	R
Lacquers	X	X	X	R	R
Lard	R	M	R	R	R
Linoleic Acid	M	X	M	R	R
Linseed Oil	R	U	R	R	R
Lye Solutions	M	R	M	R	R
Malathion	M	X	R	-	R
Maleic Acid	X	X	R	R	R
Mercury	R	R	R	R	R
Methane	R	X	R	R	R
Methanol	X	R	X	R	R
Methyl Acetate	X	M	X	R	R
Methyl Acrylate	X	M	X	R	R
Methyl Cellosolve	U	M	X	R	R
Methylene Chloride	X	U	R	R	R
Methyl Ethyl Ketone	X	R	X	R	R
Methyl Mercaptan	-	R	-	R	R
Milk	R	R	R	R	R
Mineral Oil	R	U	R	R	R
Mineral Spirits	X	X	R	R	R
Monoviny Acetyle	R	R	R	-	R
Naphtha	R	X	R	R	R
Naphthalene	X	X	R	R	R
Naphthalenic Acid	X	X	R	R	R
Natural Gas	R	X	R	R	R
Neatsfoot Oil	R	M	R	R	R
Nitric Acid, Concentrated @ Room Temp.	-	X	M	R	M
Nitrobenzene	X	R	M	R	R
Nitrogen	R	R	R	R	R
Nitropropane	X	M	X	R	R



Media Compatibility Table, cont.

Fluid	Buna-N	EPR	Viton™	Teflon™ PTFE	Chemraz™ 510
Octane	R	X	R	R	R
Octanal	R	X	R	-	R
Oleic Acid	U	X	M	R	R
Oxygen, Liquid	X	X	X	R	M
Phenol	X	X	R	-	R
Phenylhydrazine	X	M	R	R	R
Phosphoric Acid, Concentrated @ Room Temp.	M	R	R	R	R
Pine Oil	R	X	R	R	R
Potassium Hydroxide 50%	M	R	X	R	R
Propane	R	X	R	R	R
Propanol	R	R	R	X	R
Propyl Acetate	X	M	X	X	R
Pydraul, 115E	X	R	R	-	R
Pyranol	R	X	R	-	R
Pyridine	X	M	R	-	R
Rapeseed Oil	M	R	R	R	R
Resurcinol	U	R	U	R	R
SAE 10W30	R	X	R	R	R
Seawater	R	R	R	R	R
Silicone Grease	R	R	R	R	R
Silver Nitrate	M	R	R	R	R
Skelly Solvent	R	X	R	-	R
Skydrol 7000	X	R	M	-	R
Skydrol 500 B4	X	R	X	R	R
Sodium Hydroxide	R	R	M	R	R

Fluid	Buna-N	EPR	Viton™	Teflon™ PTFE	Chemraz™ 510
Sovasol 1, 2, & 3	R	X	R	-	R
Soy Bean Oil	R	U	R	R	R
Stack-Magic ECO-F	R	R	R	R	R
Stearic Acid	M	M	-	R	R
Stoddard Solvent	R	X	R	R	R
Sucrose	R	R	R	R	R
Sulfuric Acid	U	R	U	R	R
Tannic Acid	R	R	R	R	R
Tar	M	X	R	-	R
Tartaric Acid	R	M	R	R	R
Tetrachloroethane	X	X	R	R	R
Tetralin	X	X	R	R	R
Tidewater Oil	R	X	R	-	R
Toluene	X	X	R	R	R
Trichloro Ethylol	U	X	R	R	R
Triethanol Amine	U	M	X	R	M
Turpentine	R	X	R	R	R
Varnish	M	X	R	R	R
Vinegar	M	M	U	R	-
Water	R	R	M	R	M
Whiskey & Wine	R	R	R	R	R
Wood Oil	R	X	R	-	R

~ Legend ~

- R..... Recommended**
- M Marginal**
- U..... Doubtful**
- X..... Not Recommended**
- Insufficient Data**

One Year Limited Warranty

DELAWARE MANUFACTURING INDUSTRIES CORPORATION, HEREINAFTER REFERRED TO AS DMIC, WARRANTS ITS PRODUCTS (CONSUMABLE ITEMS EXCEPTED) TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP, UNDER NORMAL USE AND SERVICE, FOR A PERIOD OF SIX MONTHS FROM DATE OF INITIAL USE, OR ONE YEAR FROM DATE OF SHIPMENT FROM FACTORY, WHICHEVER IS FIRST. THIS LIMITED WARRANTY IS EFFECTIVE ONLY IF THE EQUIPMENT OR APPARATUS IS USED AS DIRECTED, IS NOT SUBJECT TO MISUSE, NEGLIGENCE, OR ACCIDENT, AND IS NOT ALTERED, TREATED, OR REPAIRED BY ANYONE OTHER THAN DMIC TECHNICAL STAFF.

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NOTES:

