

Durcon[®] 6

Materials Data Sheet



Description

DURCON 6 is an epoxy resin, modified to provide the optimum combination of corrosion resistance and strength.

Epoxy resins must be considered on their own merits for the purposes for which they are intended. DURCON 6 was developed and intended for application in the chemical and related industries where extremely corrosion resistant materials are required. DURCON 6 is a solid, cast, thermosetting epoxy which is silica filled. This material has been part of Flowserve's Durco pump line for over thirty-five years.

Corrosion Resistance

The Springboro Operations of Flowserve Corporation is devoted solely to the production of nonmetallics for application in corrosive environments. After years of research and development, the DURCON 6 formulation was established and over the past thirty-five years it has proven to be suitable in corrosive applications where expensive and more exotic metals and alloys are normally required. The relative low cost of this material also has made it attractive in the chemical equipment marketplace.

Although not immune to chemical attack in all corrosive services, DURCON 6 has a broad range of application in services such as the following: organic acids; solvents; hydrochloric acid; sulfuric acid; nitric acid; phosphoric acid; neutral, alkaline, and acid salts; chlorinated organics; and wet chlorine. DURCON 6 is not recommended for hydrofluoric acid or fluoride containing solutions. It also has very limited resistance to chromic acid and should not be used for sulfuric acid above 80 percent. DURCON 6 can provide long, trouble-free service with a minimum number of precautions. By knowing the mechanical and physical properties of DURCON 6, and taking them into consideration, practically an indefinite service life can be obtained.

Nominal Mechanical & Physical Properties

Density, gm/cc	1.980
Hardness/Rockwell M	114
Tensile Strength, ksi (MPa)	13 (90)
Compressive Strength, ksi (MPa)	38 (262)
Flexural Strength, ksi (MPa)	19 (131)
Maximum Service Temperature, °F (°C)	215 (102)

Caution – DURCON 6 is subject to both thermal and mechanical shock. If this material is used on HOT fluids, it should be warmed up or cooled down gradually to prevent thermal shock. Care should be taken when handling this material because breakage can occur from abuse.

Durcon® 6 (continued)

The following is a list of typical applications for DURCON 6. Consult your Flowserve Sales Engineer or the Flowserve Materials Engineering Department at (937) 226-4475 for specific recommendations.

Acetic Acid, 70%, 200°F	Dichlorobutane, 200°F	Oleic Acid, 200°F
Acetic Acid, Glacial, 200°F	Dimethyl Formamide, 200°F	Oxalic Acid, 200°F
Acetone, boiling	Diethyl Sulfate, 200°F	Perchloroethylene, 200°F
Acetyl Chloride, boiling	Ethyl Alcohol, boiling	Phenol, 125°F
Alcohol, 175°F	Ethyl Ether, boiling	Phosphoric Acid, 85%, 200°F
Alum, 200°F	Ethyl Nitrate, boiling	Phosphorous Oxychloride, 150°F
Aluminum Chloride, 200°F	Ethylene Dichloride, 150°F	Phthalic Acid, 200°F
Ammonium Bisulfite, 150°F	Fatty Acids, 200°F	Potassium Nitrate, 200°F
Ammonium Chloride, 200°F	Ferric Chloride, 150°F	Rayon Spin Bath, 200°F
Ammonium Sulfate, 200°F	Ferric Nitrate, 200°F	Sea Water, 200°F
Amyl Acetate, 200°F	Ferric Sulfate, 200°F	Sodium Bicarbonate, 175°F
Amyl Alcohol, 175°F	Formaldehyde, boiling	Sodium Bisulfate, 200°F
Amyl Chloride, 200°F	Formic Acid, boiling	Sodium Chloride, 200°F
Aniline, 150°F	Hydrobromic Acid, 40%, 200°F	Sodium Nitrate, 200°F
Anodizing Solutions, 200°F	Hydrochloric Acid, 10%, 200°F	Sodium Perchlorate, 100°F
Antimony Trichloride, 150°F	Hydrochloric Acid, 20%, 200°F	Sodium Sulfate, 200°F
Benzaldehyde, 200°F	Hydrochloric Acid, 30%, 200°F	Sodium Thiosulfate, 200°F
Benzene, boiling	Hydrochloric Acid, conc., boiling	Stannic Chloride, 150°F
Benzene Hexachloride, 175°F	Hydrocyanic Acid, 125°F	Sulfite Liquors, 150°F
Black Liquor, 200°F	Hypochlorous Acid, 125°F	Sulfur Chloride, 150°F
Brine, 200°F	Lactic Acid, 200°F	Sulfuric Acid, 30%, 200°F
Butyric Acid, 200°F	Magnesium Chloride, 200°F	Sulfuric Acid, 70%, 150°F
Calcium Chlorate, 150°F	Magnesium Sulfate, 200°F	Sulfuric Acid, 80%, 125°F
Calcium Chloride, 200°F	Maleic Acid, 200°F	Tannic Acid, 200°F
Carbon Tetrachloride, boiling	Malic Acid, 200°F	Tartaric Acid, 200°F
Chloroacetic Acid, 125°F	Mercuric Chloride, 200°F	Thiophenol, 200°F
Chlorinated Water, 150°F	Metal Plating Solutions, 150°F	Toluene, 175°F
Chlorine Dioxide, 150°F	Methyl Alcohol, boiling	Trichloroacetic Acid, 125°F
Chlorine, Wet, 150°F	Methyl Ethyl Ketone, boiling	Trichloroethylene, boiling
Chlorobenzene, 175°F	Nickel Chloride, 200°F	Urea, 200°F
Chromic Acid, 30%, ambient	Nickel Sulfate, 200°F	Vinegar, 200°F
Citric Acid, 200°F	Nitric Acid, 10%, 175°F	Water, boiling
Copper Sulfate, 200°F	Nitric Acid, 50%, ambient	Zinc Chloride, 200°F
Cupric Chloride, 200°F	Nitrobenzene, 150°F	Zinc Sulfate, 200°F



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