



Resins 1700-01

Description

Epoxa us 1700-01 epoxy resin is a clear low viscosity liquid that when mixed with appropriate curing agents transforms into a solid with high performance properties. These include excellent adhesive, mechanical, dielectric and chemical resistance. It is derived from bisphenol A / epichlorohydrin and because of its low viscosity high performance it has substituted polyester resin in many applications.

Resin 1700-01 can be mixed with other liquid or solid epoxy resins to achieved the desired product characteristics. Liquid modifiers, diluents, flexibilizers can be added to reach optimum properties and because of its low viscosity, high percentages of fillers can be used in the formulation.

Long shelf life and product stability makes epoxa us 1700-01 resin an ideal main resin in the formulation of today's challenging epoxy systems in the aerospace, electronic, mining, adhesive, coating industries and many others around the world. The cure and physical properties of epoxa us 1700-01 makes the blend an ideal product for application and fabrication techniques including composite application, casting, molding, pultrusion Vacuum bag laminating, filament winding, toweling, clear coatings, spraying, brushing and many more.

Key Features and Benefits

- Low viscosity allows higher filler loads
- Molding, casting and tooling projects
- Encapsulation systems
- Chemical resistant coatings, grouts and tank linings
- High Impact and compression properties in mining industry
- Longer working times at room temperature
- Fusion technology resin component
- Aerospace, electrical and construction bonding agents
- Grouting compounds
- Carbon and fiberglass epoxy laminates
- Fiber reinforced composites
- Clear coating decoupage applications

Sales Specification

PROPERTIES:	Units	Value	Test Method
Color	Gardner	1 maximum	ASTM D1544
Viscosity 77f / 25c	Poise	18-39	ASTM D445
Weight per epoxide	G/EQ	170- 177	ASTM D 1652

Typical Properties

PROPERTIES:	Units	Value	Test Method
Viscosity at 50c	Poise	2.5	ASTM D445
Viscosity at 75c	Poise	0.4	ASTM D445
Density 77f / 25c	LB/GAL	9.7	ASTM D1475
Density 77f / 25c	G/ML	1.16	

Curing Agents

Epoxa us 1700-01 resin can be cross-linked or cured with a variety of curing agents. The properties of the final product will depend on the type used and the selection of the curing agent will depend on the desired properties of the cured system. Some commonly used curing agents and their recommended concentrations, typical gel times, density and viscosity data are shown in Table 1.

Table 1 Curing Agents for epoxa us 1700-01

Curing Agent	Type	phr (190EEW)	Gel Time/min/25c/77f	Density/lbs/gal	Viscosity/77f/25c/cP	Color/Gardner
epoxa us 63-2-01	Liquid	22	95	8.1	80-100	9
epoxa us 10-01	Liquid	59	39	8.3	50-100	1
epoxa us 20-01	Liquid	15	35	8.2	25 (20c)	2
epoxa us 60-01	Viscous Liquid	62	99	8.1	7800-11700 (40c)	9
epoxa us 10-A-01	Liquid	42	142	7.9	38-57	1
epoxa us 21-01	Liquid	23	18	8.9	2900-4875	6
epoxa us 10C-01	Liquid	50-120 (by Volume)	30	8.6	20-45	1
epoxa us 61-01	Liquid	58	128	8.1	2850-4000 (40c)	9
epoxa us 21-B	Liquid	27	24	8.2	20 (20c)	2

Performance Properties

Adhesion Properties

Epoxa us 1700-01 creates strong adhesions to an ample range of substrates and this translates to a shear strength of up to 4500 psi (Mpa) in applications using this product, low shrinkage during cure contributes to this property due to the low internal stresses of epoxy resin materials.

Electrical Properties

Epoxa us 1700-01 cured systems have great dielectric and insulating properties. Systems with excellent volume resistivities, high dielectric constants and superb dissipation factors can be obtained at ambient temperature with amine and anhydride curing agents. Encapsulations of electric-electronic, molding and laminate compounds are frequently based on epoxa us 1700-01 resin.

Chemicals Resistance

Epoxa us 1700-01 cured systems have very good chemical resistance to a wide range of chemicals like caustic, acids, solvents and fuels. Chemically resistant projects can be formulated using epoxa us 1700-01 resin.

Mechanical Properties

High strength with high performance materials can be obtained using epoxa us 1700-01 resin with various hardeners. Tensile values greater than 8 000 psi with modulus greater than 300 000 psi with unfilled systems are possible. This compounds are usually hard unless high percentage elongation is desired.

Curing Information

For additional information covering the use of epoxa us 1700-01 resin with our variety of curing agents and the formulations resulting from them please contact epoxa us by phone, e-mail or letter and our team will work with you to recommend and achieve the system solution for your project or application.

Epoxy curing agents when mixed with epoxy resin cure faster with high temperature and slower with low temperature, the mixture reaction will generate heat so a thin film of resin and hardener will take longer to cure than a thick mixture or mass of resin and hardener.

Exact cure time will depend on temperature, sample mass or thickness and most importantly curing agent used. Since cure times decrease with mass or volume, special consideration and testing should be conducted when mixing larger amounts of material to achieve desired goals in working times and the overall application of a given system.

Packaging and Dispensing

Epoxa us 1700-01 resin is available in 500 lbs drums, 5 gallon pails and individual gallons. It can be stored at 100-120 f (38-49c) for ease of handling.

Viscosity will change 10-15 poise for each degree in temperature the product varies from 25c the higher temperature less viscous and lower temperature more viscous.

Always dispense the resin at the lower temperature that works for your application because it is always better to handle low temperature material than otherwise even though epoxa us 1700-01 can be dispensed at 100-120f (38-49c) safely.

Spills

Small Spill

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

Large Spill

Persons not wearing protective equipment should not participate until clean up has been completed. Stop spill at source, dike area of spill to stop spreading of the product, pump liquid to salvage tank and remaining liquid can be taken on sand, clay, or other absorbent material and put into containers.

Dispose of in accordance with all applicable local, state and federal regulations.

Note: If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40CFR 261).

Place in an appropriate disposal facility in compliance with local and federal regulations

Any clothes affected by the spill should be disposed of to avoid further contamination.

These products are sold and manufactured for industrial use only, Material Data Sheets are available upon request from epoxa us and its affiliates. Epoxa us recommends reading the MSDS completely prior to using the product.

Transportation

DOT Description

NON-REGULATED BY D.O.T.

DOT information - 49 CFR 172.101

CFR_ROAD NOT REGULATED FOR TRANSPORT

IATA_C NOT REGULATED FOR TRANSPORT

IMDG NOT REGULATED FOR TRANSPORT

CFR_RAIL NOT REGULATED FOR TRANSPORT

Requests made to epoxa us about our products shall be handled by a representative. **For product storage and handling procedures to maintain product quality within our stated specifications, please review Certificates of Analysis, which are available.** Use of other materials in conjunction with epoxa us products may require additional procedures and precautions. Please review and follow the safety information provided by the manufacturer of other materials.

Limitations

Customers must evaluate epoxa us products and make their own determination as to fitness of use in their particular applications, projects and methods.

From automotive to mining, from electronics to construction, products from epoxa us incorporated lead the way and have become standard products in their respective industries. We have a strong presence in epoxy systems and advanced materials with a 40+ year heritage of innovation and with applications that improve everyday operations. By knowing our customers needs and creating custom technology for them, we provide science based solutions to help customers increase performance, solve product development issues and engineer better manufacturing processes.

Contact Information

For product prices, availability, or order placement, contact our customer service by visiting www.epoxaus.com
For literature and technical assistance, visit our website or call us with your questions.

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