

An Emerald Performance Materials Company

ERISYS® GE-6
2-Ethylhexyl glycidyl ether
Aliphatic Monofunctional Epoxy
Reactive Diluent
CAS NO. 2461-15-6

DESCRIPTION

ERISYS GE-6, epoxidized 2-ethylhexanol, is a low viscosity mono-epoxide. It is intended for use as a reactive diluent for high viscosity epoxy resins. GE-6 is compatible at all levels with those resins and resin diluent blends can be cured using any epoxy resin curing agent.

Of the CVC diluents, GE-6 is second only to butyl glycidyl ether (ERISYS GE-5) in viscosity reduction. GE-6, however, is less volatile, has a lower dermatological potential and is less toxic than BGE. In applications where volatilization or skin contact may occur, GE-6's low vapor pressure and exceptionally low residual epichlorohydrin level make it an ideal BGE replacement.

As with all monofunctional aliphatic epoxides, increasing levels of GE-6 in epoxy resins will lengthen gel times and modify cured properties. See the following table and graphs for the extent of the modifications.

TYPICAL PROPERTIES

Appearance	Clear, Clean
Viscosity @ 25°C, cps	1 - 4
Epoxide Equivalent Weight, g/eq	205 - 235
APHA Color, max	100
Residual Epichlorohydrin, max ppm	10
Hydrolyzable Chloride, max %	0.10
Weight per Gallon, @ 25°C, lbs.	7.6 ± 0.1
Flash Point, °C (°F)	>94 (197)

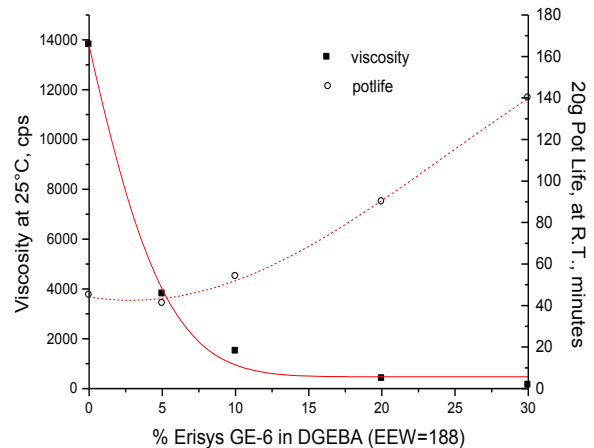
HANDLING PROPERTIES

The use of ERISYS GE-6 will effect the handling and cured properties of resin formulations. The effects of these changes are shown below.

APPLICATIONS

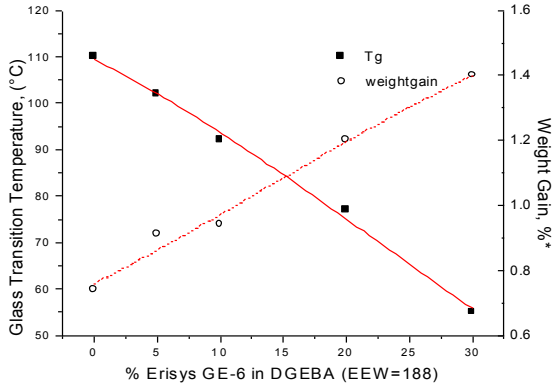
- Adhesives and Sealants
- 100% Solids Coatings
- Tooling
- Specialized Curing Agent Adducts
- Chemical Intermediate for Graft Polymers
- Low VOC Paint
- Laminating
- Flooring

VISCOSITY AND POT LIFE

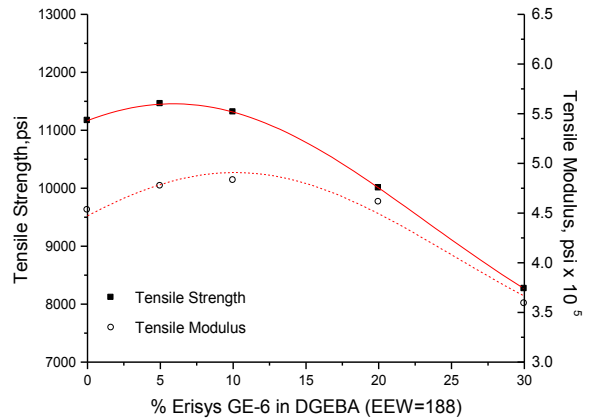


HANDLING PROPERTIES (Continued)

Tg and MOISTURE PICKUP



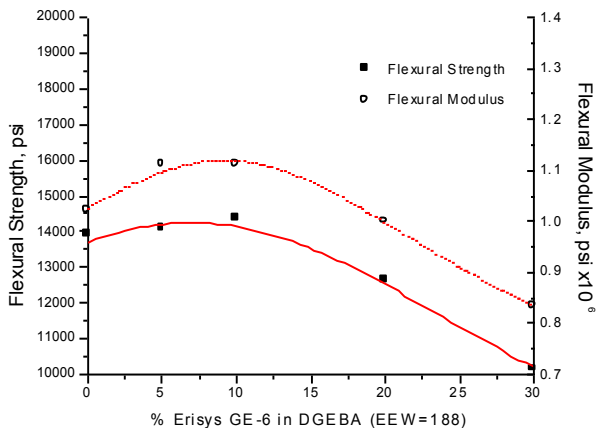
TENSILE PROPERTIES



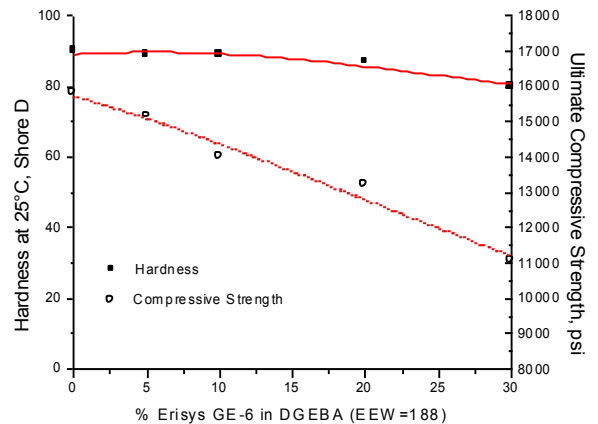
*After 2 hours in boiling water

THE EFFECT OF ERISYS GE-6 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH TETA

FLEXURAL PROPERTIES



HARDNESS and COMPRESSIVE STRENGTH



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PROPERTIES OF DGEBA/GE-6/TETA SYSTEMS

FORMULATION, pbw	A	B	C	D	E
DGEBA (EEW-188)	100.0	95.0	90.0	80.0	70.0
ERISYS GE-6	---	5.0	10.0	20.0	30.0
Triethylenetetramine	13.0	12.9	12.8	12.5	12.2

RESULTS
HANDLING PROPERTIES

Viscosity @ 25° C of resin portion only, cps	13,800	3,800	1,500	400	140
20 g Pot Life, hours:minutes	0:45	0:41	0:54	1:30	2:20

CURED PROPERTIES*
TENSILE

Strength, psi	11,165	11,455	11,310	10,005	8,265
MPa	77	79	78	69	57
Elongation, %	4.2	5.7	6.1	5.9	5.8
Modulus, psi	4.53E + 05	4.77E + 05	4.83E + 05	4.61E + 05	3.59E + 05
MPa	3,127	3,292	3,329	3,176	2,479

FLEXURAL

Strength, psi	13,920	14,065	14,355	12,615	10,150
MPa	96	97	99	87	70
Modulus, psi	1.02E + 06	1.11E + 06	1.11E + 06	9.99E+05	8.34E + 05
MPa	7,063	7,688	7,669	6,893	5,755

COMPRESSIVE

Strength at yield, psi	7,067	7,233	8,167	8,000	7,233
MPa	49	50	56	55	50
Ultimate strength, psi	15,833	15,167	14,000	13,200	11,066
MPa	109	105	97	91	76

HARDNESS @ 25°C,

D durometer	90	89	89	87	80
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GLASS TRANSITION TEMPERATURE,

° C	110	102	92	77	55
° F	230	216	198	171	131

**WATER ABSORPTION,
WEIGHT GAIN AFTER:**

28 Days in 25°C water, %	0.77	0.77	0.79	1.0	1.4
2 Hours in boiling water, %	0.74	0.91	0.94	1.2	1.4

*Cure: gel at R.T. + 2 hours at 100°C

HEALTH & SAFETY PRECAUTIONS

ERISYS GE-6 is not a primary skin irritant and sensitizer. However, as with any epoxy material, irritation can result from repeated or prolonged contact. The symptoms of this irritation may appear as a mild reddening or a more pronounced rash. It is, therefore, important to avoid skin contact where possible. Rubber gloves, full eye protection, and protective clothing are recommended.

Refer to the **CVC Thermoset Specialties** Material Safety Data Sheet on ERISYS GE-6 for additional safety and handling information. The MSDS is revised as new data becomes available.

PACKAGING & AVAILABILITY

ERISYS GE-6 is available in 55 gallon steel non-returnable drums (420 lbs. net) and 5 gallon plastic pails (35 lbs. net). Bulk deliveries are available on special request.

DISCLAIMER

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CVC Thermoset Specialties—844 N. Lenola Road/Moorestown, NJ 08057
An Emerald Performance Materials Company

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