

An Emerald Performance Materials Company

ERISYS® GE-7
C8-C10 Glycidyl Ether
Aliphatic Monofunctional Epoxy
Reactive Diluent
CAS NO. 68609-96-1

DESCRIPTION

ERISYS GE-7 is the monoglycidyl ether of a naturally occurring C8-C10 aliphatic alcohol. The primary use of GE-7 is as a reactive diluent for high viscosity epoxy resin. GE-7 is compatible at all concentrations with those resins and the blends can be cured using any epoxy resin curing agent.

GE-7 poses relatively low health risks due to its low vapor pressure and exceptionally low residual epichlorohydrin level. Formulations containing GE-7 are therefore recommended for use in poorly ventilated areas. A typical application of GE-7 would be as a diluent in the Part A of an 100% solids floor coating formulation.

As with all monofunctional aliphatic epoxies, increasing concentrations of GE-7 in epoxy resins will lengthen gel times and modify cured properties. See the following table and graphs for the extent of the modifications.

APPLICATIONS

- Chemical Resistance Coatings
- Marine Coatings
- 100% Solids Coatings
- Concrete/Civil Engineering Adhesives
- General Purpose Adhesives
- Tooling
- Casting
- Electrical

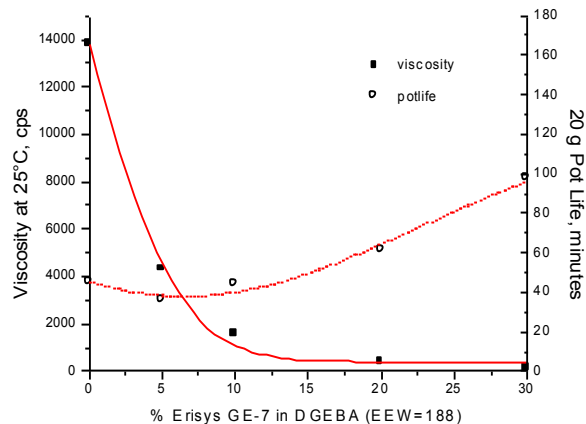
TYPICAL PROPERTIES

Appearance	Clear, Clean
Viscosity @ 25°C, cps	1 - 6
Epoxide Equivalent Weight, g/eq	220 - 235
APHA Color, max	100
Residual Epichlorohydrin, max ppm	10
Hydrolyzable Chloride, max %	0.05
Weight per Gallon, @ 25°C, lbs.	7.5 ± 0.1
Water Content, max %	0.10
Flash Point, °C (°F)	>94 (>200)

HANDLING PROPERTIES

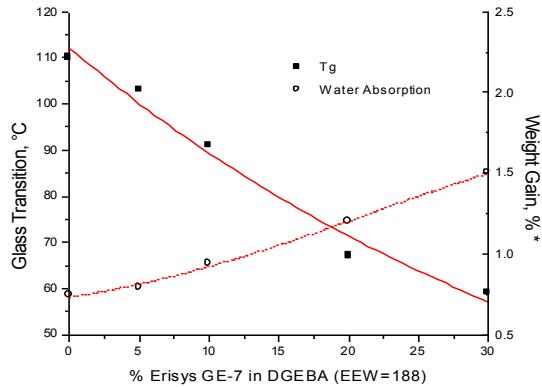
The use of ERISYS GE-7 will effect the handling and cured properties of resin formulations. The effects of these changes are shown below.

VISCOSITY AND POT LIFE

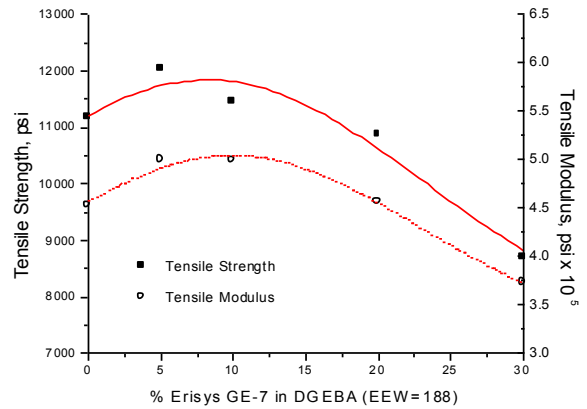


HANDLING PROPERTIES (Continued)

Tg and MOISTURE PICKUP



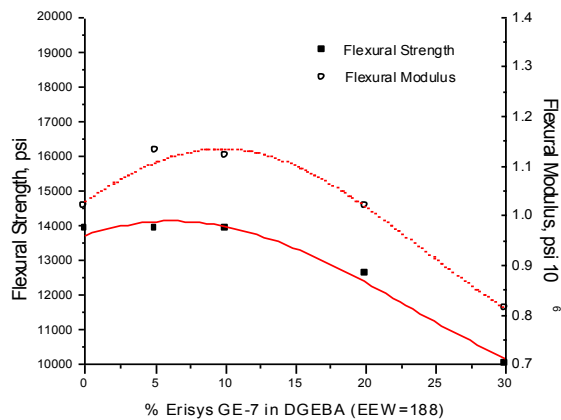
TENSILE PROPERTIES



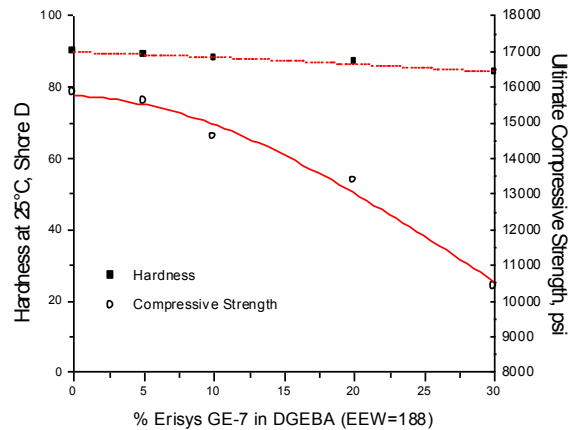
*After 2 hours in boiling water

THE EFFECT OF ERISYS GE-7 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH TETA

FLEXURAL PROPERTIES



HARDNESS and COMPRESSIVE STRENGTH



PROPERTIES OF DGEBA/GE-7/TETA SYSTEMS

FORMULATION, pbw	A	B	C	D	E
DGEBA (EEW-188)	100.0	95.0	90.0	80.0	70.0
ERISYS GE-7	0	5.0	10.0	20.0	30.0
Triethylenetetramine	13.0	12.9	12.7	12.5	12.2
RESULTS					
HANDLING PROPERTIES					
Viscosity @ 25° C of resin					
portion only, cps	13,800	4,300	1,552	375	134
20 g Pot Life, hours:minutes	0:45	0:36	0:44	1:01	1:38
CURED PROPERTIES*					
TENSILE					
Strength, psi	11,165	12,035	11,455	10,875	8,700
MPa	75	83	79	75	60
Elongation, %	4.2	5.7	5.6	5.2	4.1
Modulus, psi	4.53E + 05	5.00E + 05	4.99E + 05	4.56E + 05	3.73E + 05
MPa	3,127	3,446	3,444	3,148	2,571
FLEXURAL					
Strength, psi	13,920	13,920	13,920	12,615	10,005
MPa	96	96	96	87	69
Modulus, psi	1.02E + 06	1.13E + 06	1.12E + 06	1.02E+06	8.13E + 05
MPa	7,063	7,760	7,746	7,047	5,606
COMPRESSIVE					
Strength at yield, psi	7,067	7,967	7,933	8,400	5,833
MPa	49	55	55	58	40
Ultimate strength, psi	15,833	15,600	14,600	13,367	10,400
MPa	109	108	101	92	72
HARDNESS @ 25°C,					
D durometer	90	89	88	87	84
GLASS TRANSITION TEMPERATURE,					
° C	110	103	91	67	59
° F	230	217	196	153	138
WATER ABSORPTION, WEIGHT GAIN AFTER:					
28 Days in 25°C water, %	0.77	0.79	0.86	1.1	1.7
2 Hours in boiling water, %	0.74	0.79	0.94	1.2	1.5

*Cure: gel at R.T. + 2 hours at 100°C

HEALTH & SAFETY PRECAUTIONS

ERISYS GE-7 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-7 for additional safety & handling information. The MSDS is revised as new data becomes available.

PACKAGING & AVAILABILITY

ERISYS GE-7 is available in 55 gallon steel non-returnable drums (410 lbs. net) and 5 gallon plastic pails (35 lbs. net). Bulk deliveries are available on special request.

DISCLAIMER

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