

An Emerald Performance Materials Company

## ERISYS™ GE-35

Castor Oil Triglycidyl Ether

Low Viscosity Flexibilizing Epoxy Resin

CAS NO. 74398-71-3

EINECS - Polymer (Monomers Listed)

### DESCRIPTION

ERISYS GE-35 is the triglycidyl ether of castor oil. It is a low viscosity polyepoxide resin which imparts flexibility, impact resistance and thermal shock resistance to epoxy formulations.

GE-35 is universally compatible with standard Bisphenol A epoxy resins. It has a low vapor pressure and a mild non-offensive odor. Increasing the concentration of GE-35 in epoxy formulations reduces viscosity and lengthens pot life while imparting stress relief after cure.

### TYPICAL PROPERTIES

Appearance	Clear, Clean
Viscosity @ 25°C, cps	300 - 500
Epoxide Equivalent Weight, g/eq	550 - 650
Gardner Color, max	8
Residual Epichlorohydrin, max ppm	10
Weight per Gallon, @ 25°C lbs.	8.5 ± 0.1
Flash Point, °C (°F)	>93 (>200)

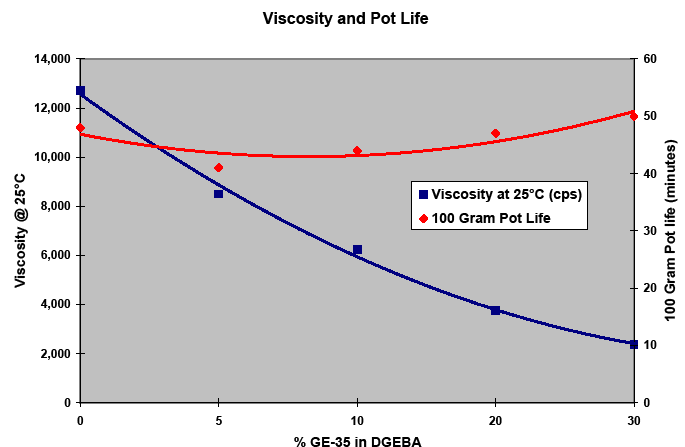
### HANDLING PROPERTIES

The use of ERISYS GE-35 will effect the handling and cured properties of resin formulations. The effects of these changes are shown below.

### APPLICATIONS

- Concrete Patching Compounds
- Floor Coatings
- Adhesives
- Bridge Decking Compounds
- Joint Sealants

### VISCOSITY AND POT LIFE

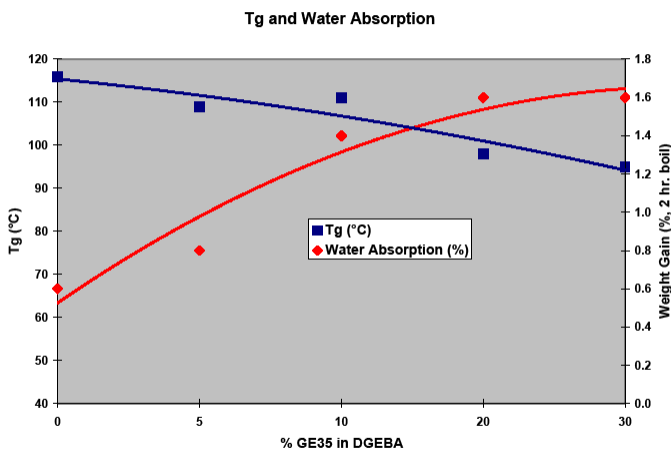


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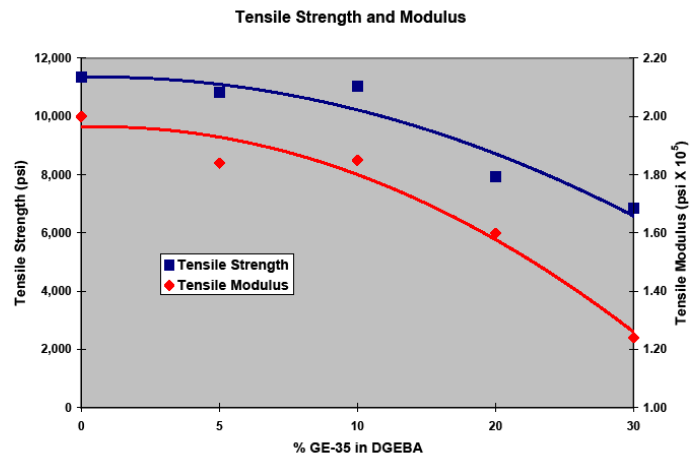
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## THE EFFECT OF ERISYS GE-35 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH TETA

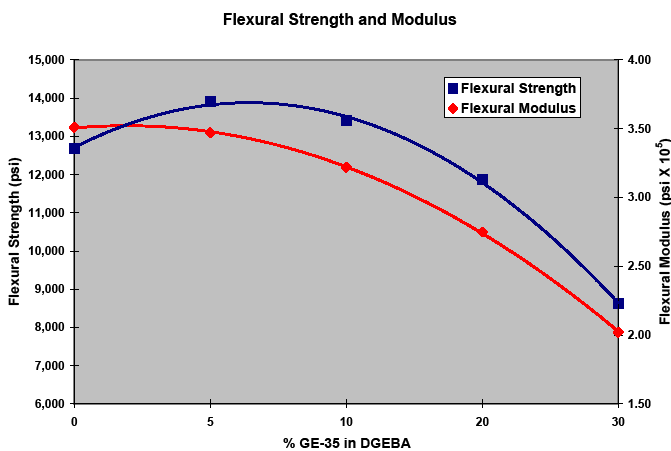
### Tg and WATER ABSORPTION



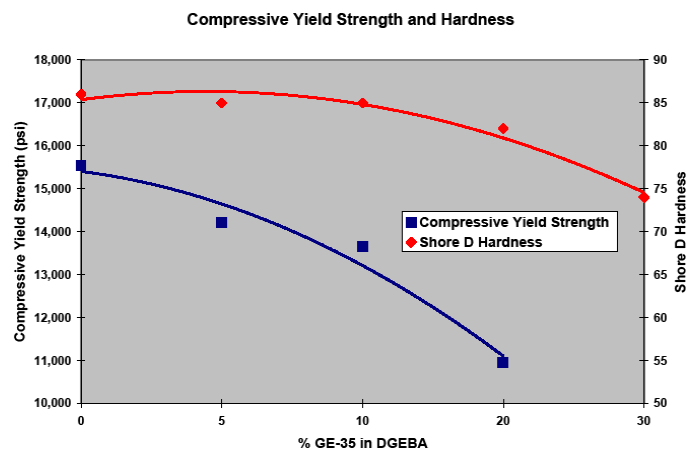
### TENSILE PROPERTIES



### FLEXURAL PROPERTIES



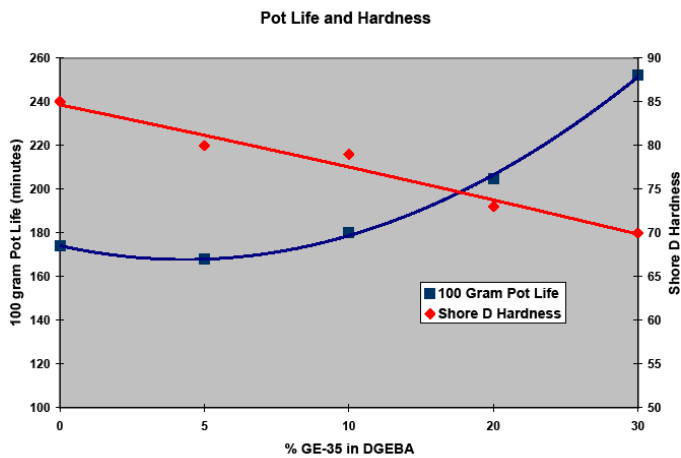
### COMPRESSIVE STRENGTH and HARDNESS



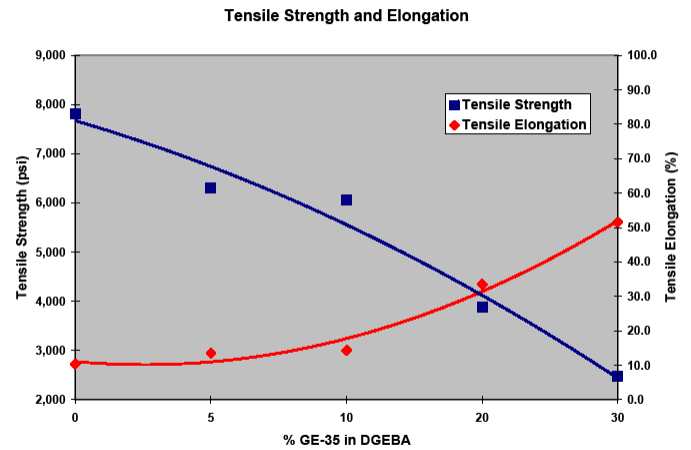
Physical Properties Report		ERISYS GE-35 in Epalloy 7190			
Epalloy 7190	100	95	90	80	70
Erisys GE-35	0	5	10	20	30
TETA	13.0	12.5	11.8	10.9	10.1
Resin Viscosity @ 25°C (cps)	12,700	8,500	6,250	3,750	2,375
100 gram gel time (mins)	48	41	44	47	50
Tensile Strength (psi)	11,357	10,827	11,023	7,931	6,841
Tensile Elongation (%)	8.1	8.1	11.1	7.0	15.4
Tensile Modulus (psi x 10 <sup>5</sup> )	2.00	1.84	1.85	1.60	1.24
Flexural Strength (psi)	12,687	13,900	13,400	11,866	8,613
Flexural Modulus (psi x 10 <sup>5</sup> )	3.51	3.47	3.22	2.75	2.02
Compressive Yield Strength	15,552	14,207	13,654	10,959	x
Compressive Modulus (psi x 10 <sup>5</sup> )	2.29	2.25	1.98	1.91	1.30
Shore D Hardness	86	85	85	82	74
Tg (°C)	116	109	111	98	95
Water Absorption (28 days @ RT)	0.7	0.7	0.8	1.0	1.3
Water Absorption (2 hour boil)	0.6	0.8	1.4	1.6	1.6

## THE EFFECT OF ERISYS GE-35 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH ANCAMIDE 502 FOR A FLEXIBILIZED FORMULATION

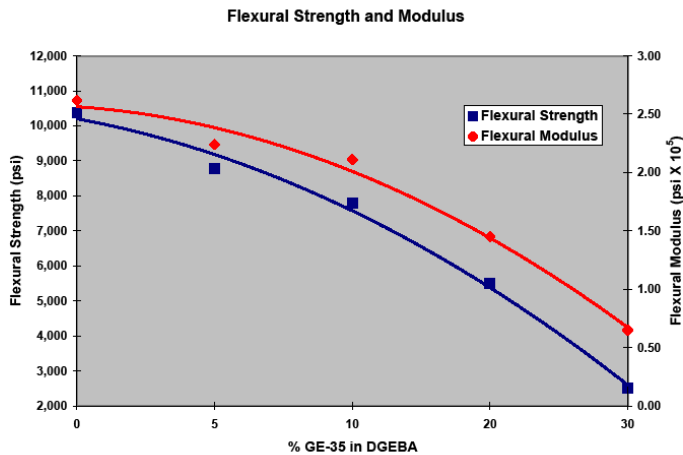
### POT LIFE and HARDNESS



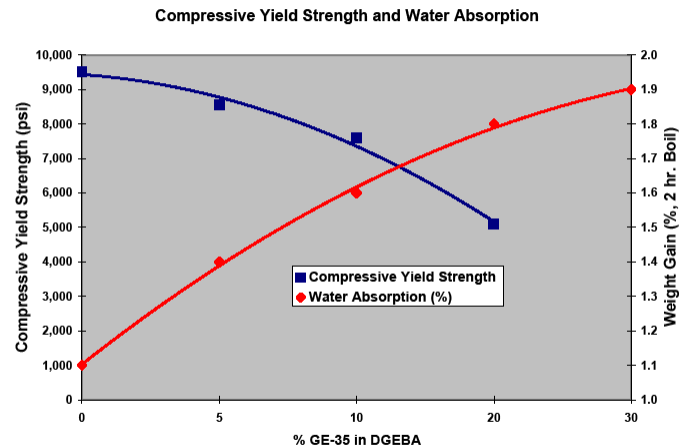
### TENSILE PROPERTIES



### FLEXURAL PROPERTIES



### COMPRESSIVE STRENGTH and WATER ABSORPTION



Physical Properties Report	ERISYS GE35 with Ancamide 502				
Epalloy 7190	100	95	90	80	70
Erisys GE-35	0	5	10	20	30
Ancamide 502	48.6	46.9	45.3	42.0	38.7
Resin Viscosity @ 25°C (cps)	12,700	8,300	5,900	3,500	2,250
100 gram gel time (mins)	174	168	180	205	252
Tensile Strength (psi)	7,803	6,309	6,060	3,882	2,473
Tensile Elongation (%)	10.4	13.5	14.3	33.5	51.5
Tensile Modulus (psi x 10 <sup>5</sup> )	1.41	1.25	1.18	0.79	0.41
Flexural Strength (psi)	10,370	8,772	7,794	5,495	2,503
Flexural Modulus (psi x 10 <sup>5</sup> )	2.62	2.24	2.11	1.45	0.65
Compressive Yield Strength	9,511	8,545	7,587	5,089	x
Compressive Modulus (psi x 10 <sup>5</sup> )	1.91	1.89	1.66	1.00	0.56
Shore D Hardness	85	80	79	73	70
Water Absorption (28 days @ RT)	1.0	1.3	1.4	1.8	1.9
Water Absorption (2 hour boil)	1.1	1.4	1.6	1.8	1.9

## **HEALTH & SAFETY PRECAUTIONS**

ERISYS GE-35 is not a primary skin irritant or 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. Chemical resistant gloves, full eye protection and protective clothing are recommended.

Refer to **CVC Thermoset Specialties** Material Safety Data Sheet on ERISYS GE-35 for additional safety and health information. The MSDS is revised as new data becomes available.

## **PACKAGING & AVAILABILITY**

ERISYS GE-35 is available in 55 gal. non-returnable steel drums (net weight 450 lbs.) and 5 gal. plastic pails (40 lbs. net). Bulk shipments are available with adequate lead-time. Drum inventory is available at most CVC regional warehouses. Check with your local sales representative for the shipping location nearest you.

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