

An Emerald Performance Materials Company

**ERISYS® GE-5**  
**n-Butyl Glycidyl Ether**  
**Aliphatic Monofunctional Epoxy**  
**Diluent**  
**CAS NO. 2426-08-6**

**DESCRIPTION**

ERISYS GE-5 is the monofunctional glycidyl ether of butyl alcohol. Of the CVC epoxy functional diluents, GE-5 is the most efficient in reducing the viscosity of epoxy resins. Lower formulation viscosity allows increased filler loading and/or improved substrate wetting. Compared to a non-diluted resin, the use of GE-5, (of the unfilled resin portion) in a room temperature cure formulation, produces faster gel times. A greater degree of cure, as evidenced by the percentage of epoxy groups consumed versus time, also occurs. Due to the monofunctionality of GE-5, some sacrifice in elevated temperature and chemical resistance may, however, occur.

**TYPICAL PROPERTIES**

Appearance	Clear, Clean
Viscosity @ 25°C, max cps	2
Epoxide Equivalent Weight, g/eq	145 - 155
APHA Color, max	100
Residual Epichlorohydrin, max ppm	25
Hydrolyzable Chloride, max %	0.10
Weight per Gallon, @ 25°C, lbs.	7.7 ± 0.1
Flash Point, °C (°F)	>129

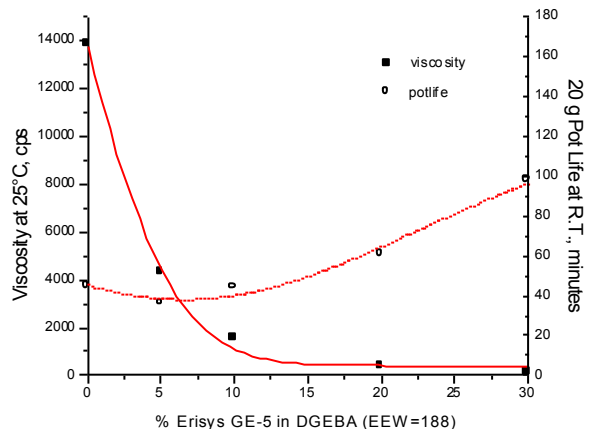
**HANDLING PROPERTIES**

The use of ERISYS GE-5 will effect the handling and cured properties of resin formulations. The effects of these changes are shown below.

**APPLICATIONS**

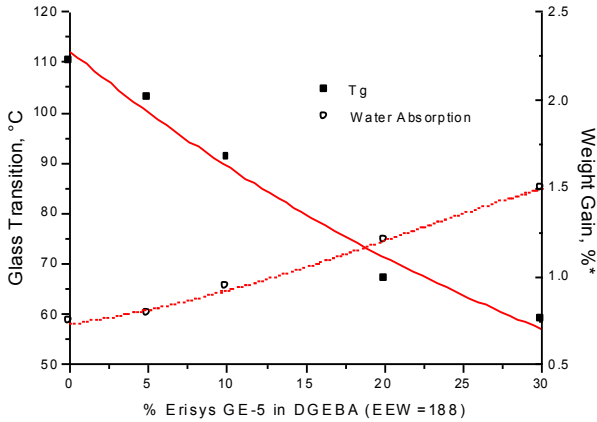
- Adhesives
- Flooring
- Potting and Encapsulation
- Laminating
- Tooling

**VISCOSITY AND POT LIFE**



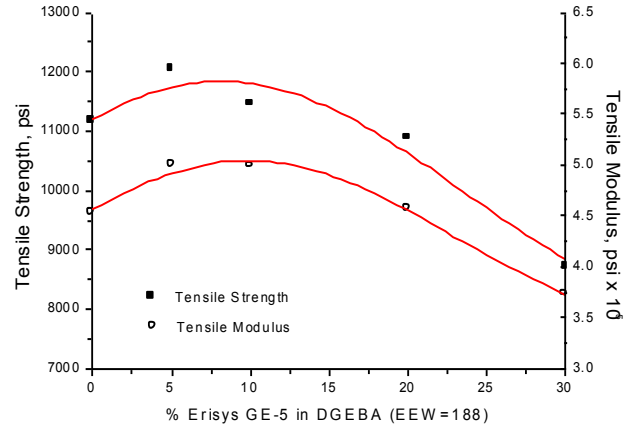
**HANDLING PROPERTIES (Continued)**

**Tg and MOISTURE PICKUP**



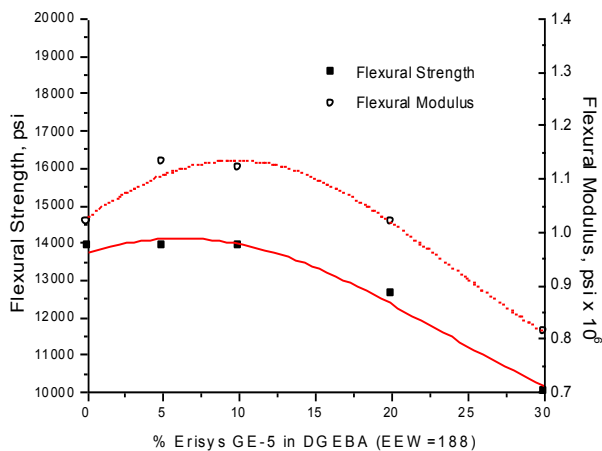
\*After 2 hours in boiling water

**TENSILE PROPERTIES**

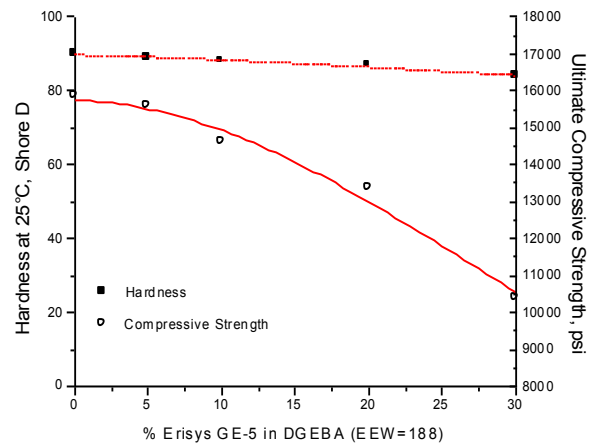


**THE EFFECT OF ERISYS GE-5 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH TETA**

**FLEXURAL PROPERTIES**



**HARDNESS and COMPRESSIVE STRENGTH**



**PROPERTIES OF DGEBA/GE-5/TETA SYSTEMS**

FORMULATION, pbw	A	B	C	D	E
DGEBA (EEW-188)	100.0	95.0	90.0	80.0	70.0
ERISYS GE-5	0	5.0	10.0	20.0	30.0
Triethylenetetramine	13.0	12.9	12.7	12.5	12.2
<b>RESULTS</b>					
<b>HANDLING PROPERTIES</b>					
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
<b>CURED PROPERTIES*</b>					
<b>TENSILE</b>					
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
<b>FLEXURAL</b>					
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
<b>COMPRESSIVE</b>					
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
<b>HARDNESS @ 25°C,</b>					
D durometer	90	89	88	87	84
<b>GLASS TRANSITION TEMPERATURE,</b>					
° C	110	103	91	67	59
° F	230	217	196	153	138
<b>WATER ABSORPTION, WEIGHT GAIN AFTER:</b>					
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-5 is a sensitizer and can be a severe skin and respiratory tract irritant with prolonged or repeated 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. Impervious gloves, full eye protection and protective clothing should be worn when using this material.

Refer to **CVC Thermoset Specialties** Material Safety Data Sheet on ERISYS GE-5 for additional safety and handling information. The MSDS is revised as new data becomes available.

## **PACKAGING & AVAILABILITY**

GE-5 is available in 55 gal. non-returnable steel drums (net weight 420 lbs.) and 5 gal. plastic pails (35 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.

## **DISCLAIMER**

The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained there from. The information is based on laboratory work with small-scale equipment and does not necessarily indicate end product performance. Because of the variations in methods, conditions, and equipment used commercially in processing these materials, no warranties or guarantees are made as to the suitability of the products for the applications disclosed. Full-scale testing and end product performance are the responsibility of the user. CVC Thermoset Specialties shall not be liable for and the customer assumes all risk and liability of any use or handling of any material beyond CVC's direct control. **THE SELLER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.** Nothing contained herein is to be considered permission, recommendation, nor as an inducement to practice any patented invention without permission of the patent owner. **IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.**

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

© Copyright 2006 Emerald Performance Materials LLC. 6/2006