

An Emerald Performance Materials Company

**ERISYS® GS-120**  
**Dimer Acid Diglycidyl Ester**  
**CAS NO. 68475-94-5**  
**EINECS - 500-215-4**

**DESCRIPTION**

ERISYS GS-120 is the diepoxide of a long chain aliphatic dimer acid. GS-120 is expected to find utility as a reactive additive which imparts a degree of flexibility to normally rigid epoxy systems. The low viscosity of GS-120 will reduce the viscosity of your formulation, allowing for increased filler loading and improved handling. GS-120 will increase toughness and tensile elongation, and improve impact and thermal shock resistance. Improvements in tensile shear and peel adhesion will also be realized. These benefits are achieved, however, with some sacrifice in elevated temperature performance and chemical resistance.

GS-120 is typically used as a flexibilizing diluent with liquid DGEBA resins such as EPALLOY 7190. It is also ideally suited for use as a reactive diluent for use with HyPox™ DA323, a dimer adduct of DGEBA resin. In combination with other resins the possibility of forming incompatible blends exists and, therefore, the use of GS-120 may have to be avoided for some applications.

EPALLOY 7190/GS-120 blends can be cured with all typical epoxy curing agents except epoxy/amine adducts, where incompatible cured formulations may result.

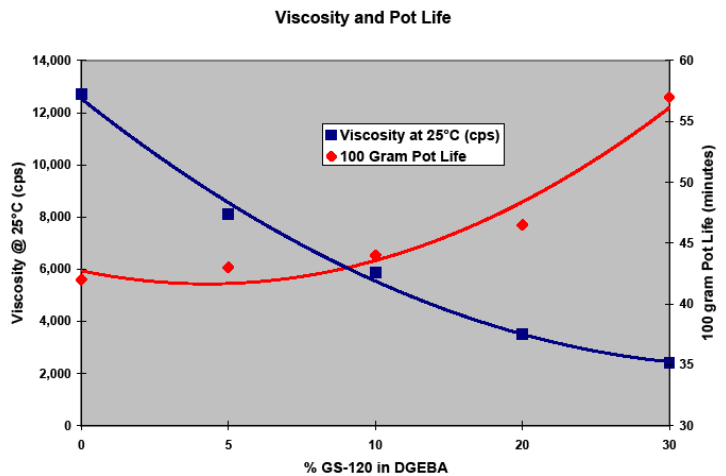
**APPLICATIONS**

- Floor coatings
- Adhesives
- Potting compounds
- Laminating
- Filament winding
- Grouts
- Joint Sealants

**TYPICAL PROPERTIES**

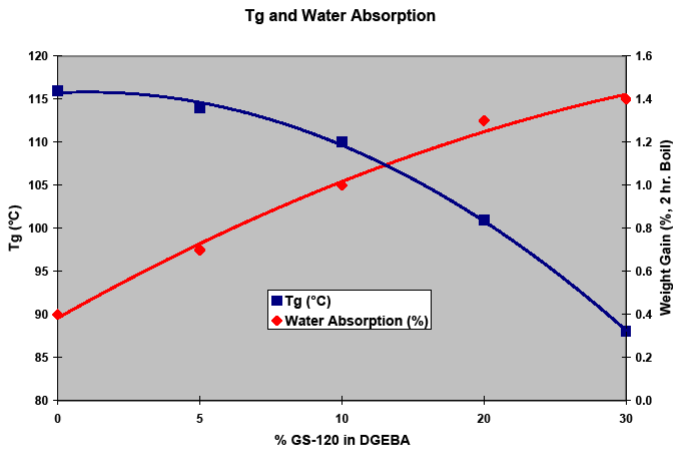
Appearance	Clear, Clean
Viscosity @ 25°C, cps	400 – 900
Epoxide Equivalent Weight, g/eq	390 – 470
Gardner Color, max	9
Weight per Gallon, @ 25°C, lbs.	8.2 ± 0.1
Flash Point, °C (°F)	>93.3 (>200)

**VISCOSITY AND POT LIFE**

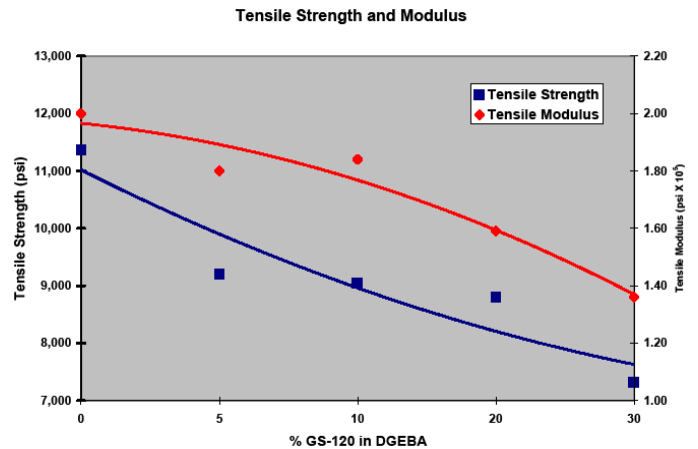


THE EFFECT OF ERISYS GS-120 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH TETA

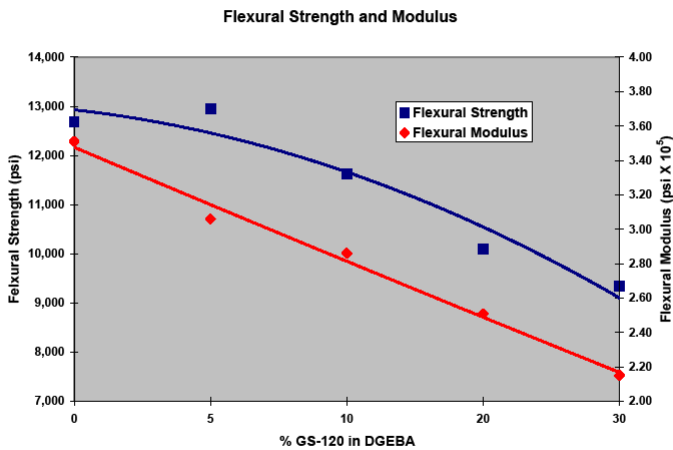
Tg and WATER ABSORPTION



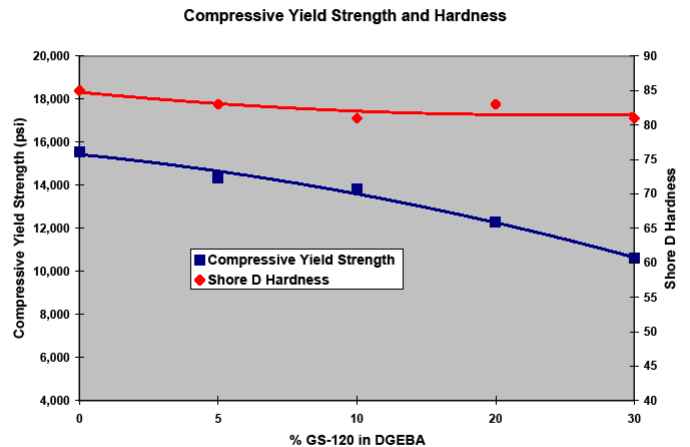
TENSILE PROPERTIES



FLEXURAL PROPERTIES



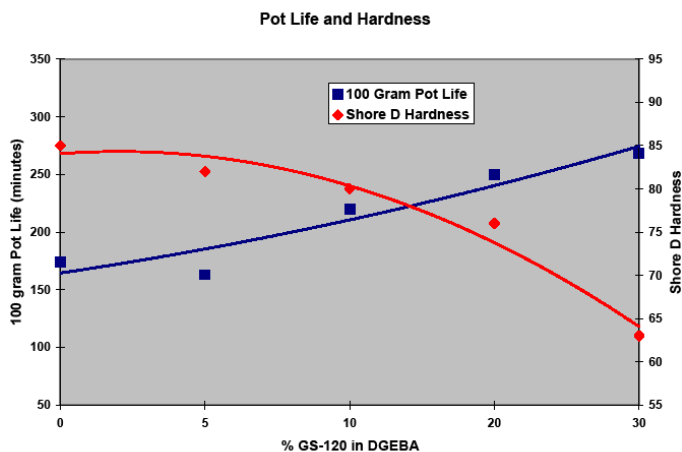
COMPRESSIVE STRENGTH and HARDNESS



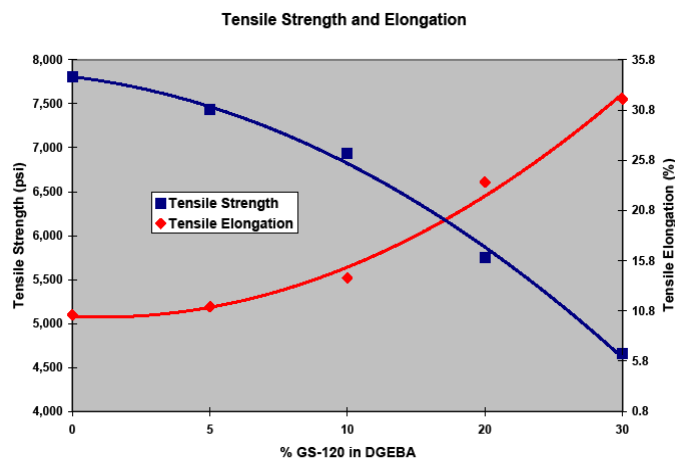
Physical Properties Report	GS-120 in Epalloy 7190				
Epalloy 7190	100	95	90	80	70
Erisys GS-120	0	5	10	20	30
TETA	13	12.6	12.3	11.6	10.9
Resin Viscosity @ 25°C (cps)	12,700	8,125	5,875	3,500	2,400
100 gram gel time (mins)	42	43	44	47	57
Tensile Strength (psi)	11,357	9,197	9,042	8,806	7,319
Tensile Elongation (%)	8.1	6.8	6.1	8.8	13.4
Tensile Modulus (psi x 10 <sup>5</sup> )	2.00	1.80	1.84	1.59	1.36
Flexural Strength (psi)	12,687	12,953	11,627	10,099	9,335
Flexural Modulus (psi x 10 <sup>5</sup> )	3.51	3.06	2.86	2.51	2.15
Compressive Yield Strength	15,552	14,347	13,820	12,280	10,606
Compressive Modulus (psi x 10 <sup>5</sup> )	2.29	2.34	2.21	2.08	1.76
Shore D Hardness	85	83	81	83	81
Tg (°C)	116	114	110	101	88
Water Absorption (28 days @ RT)	0.3	0.7	0.8	1.0	1.1
Water Absorption (2 hour boil)	0.4	0.7	1.0	1.3	1.4

## THE EFFECT OF ERISYS GS-120 ON THE CURED PROPERTIES OF LIQUID EPOXY RESIN (EEW 188) CURED WITH ANCAMIDE 502 FOR A FLEXIBILIZED FORMULATION

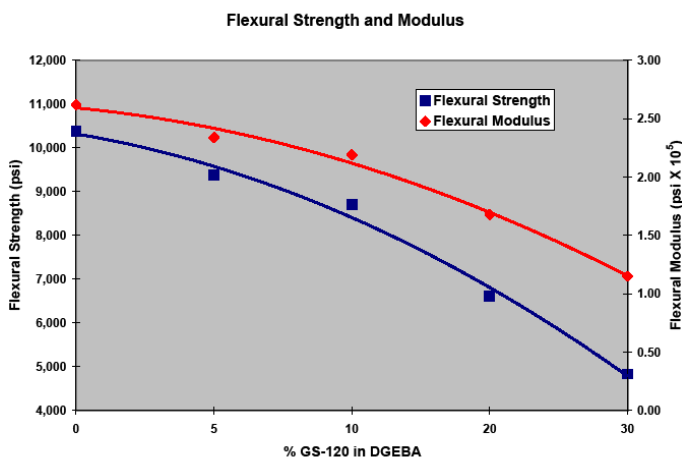
### POT LIFE and HARDNESS



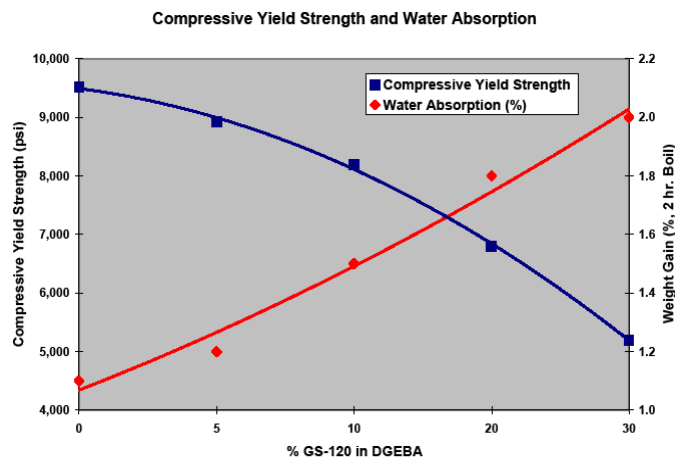
### TENSILE PROPERTIES



### FLEXURAL PROPERTIES



### COMPRESSIVE STRENGTH and WATER ABSORPTION



<b>Physical Properties Report</b>	<b>GS-120 with Ancamide 502</b>				
Epalloy 7190	100	95	90	80	70
Erisys GS-120	0	5	10	20	30
Ancamide 502	48.6	47.3	46.0	43.3	40.7
Resin Viscosity @ 25°C (cps)	12,700	7,800	5,500	3,200	2,000
100 gram gel time (mins)	174	163	220	250	288
Tensile Strength (psi)	7,803	7,437	6,932	5,751	4,652
Tensile Elongation (%)	10.4	11.2	14.1	23.6	31.9
Tensile Modulus (psi x 10 <sup>5</sup> )	1.41	1.35	1.24	1.07	0.86
Flexural Strength (psi)	10,370	9,381	8,700	6,620	4,834
Flexural Modulus (psi x 10 <sup>5</sup> )	2.62	2.34	2.19	1.68	1.15
Compressive Yield Strength	9,511	8,928	8,196	6,797	5,197
Compressive Modulus (psi x 10 <sup>5</sup> )	1.91	1.86	1.72	1.40	1.13
Shore D Hardness	85	82	80	76	63
Water Absorption (28 days @ RT)	0.9	1.3	1.5	1.9	2.2
Water Absorption (2 hour boil)	1.1	1.2	1.5	1.8	2.0



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ERISYS® GS-120

## **HEALTH & SAFETY PRECAUTIONS**

ERISYS GS-120 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 GS-120 for additional safety & handling information. The MSDS is revised as new data becomes available.

## **PACKAGING & AVAILABILITY**

ERISYS GS-120 is available in 55 gal. non-returnable steel drums (net weight 440 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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