HUNTSMAN
Enriching lives through innovation

Advanced Materials

ERISYS® GE35H#

Low-Viscosity, Flexibilizing Epoxy Resin (Castor Oil Triglycidyl Ether)

DATA SHEET

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

Applications

- Concrete patching compounds
- Floor coatings
- Adhesives
- Bridge decking compounds
- Joint sealants

Properties

ERISYS® GE-35H resin 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 ERISYS® GE-35H resin in epoxy formulations reduces viscosity and lengthens pot life while imparting stress relief after cure.

Key data

Specified key data

Appearance (visual)	**clear**	
Epoxy Equivalent Weight (Titration)	**550 - 650**	**[g/eq]**
Viscosity at 25 °C (Brookfield)	**300 - 500**	**[mPa s]**
Gardner Color	**<8**	
Water content (Karl Fischer titration)	**<0.1**	**[%]**

Specified key data are individually checked throughout and guaranteed.

Typical key data

Medium epoxy equivalent weight (ISO 3001)	600	[g/eq]
Residual Epichlorohydrin, max	≤ 10	[ppm]
Flash point	≥ 93	[°C]
As-supplied form	liquid	
Odour	slight	
Shelf life (at storage temperature between 2 - 40 °C) (see expiry date on original container)	3 years	
Hazardous decomposition products (when disposed of in fire)	carbon monoxide, carbon dioxide and other toxic gases and vapours	
Disposal	regular procedures approved by local authorities	

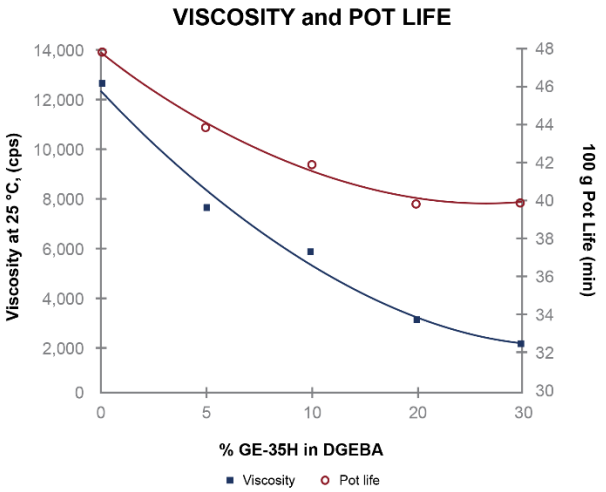
Typical key data are spot checked; the values are typical for the product and are indicated for information only. The values are not guaranteed.

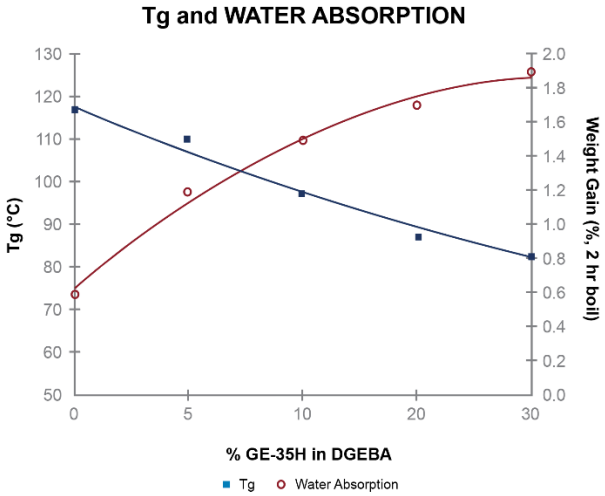
In addition to the brand name product denomination may show different appendices, which allows us to differentiate between our production sites: e.g. BD = Germany, US = United States, IN = India, CI = China, etc. These appendices are in use on packaging, transport and invoicing documents. Generally, the same specifications apply for all versions. Please address any additional need for clarification to the appropriate Huntsman contact.

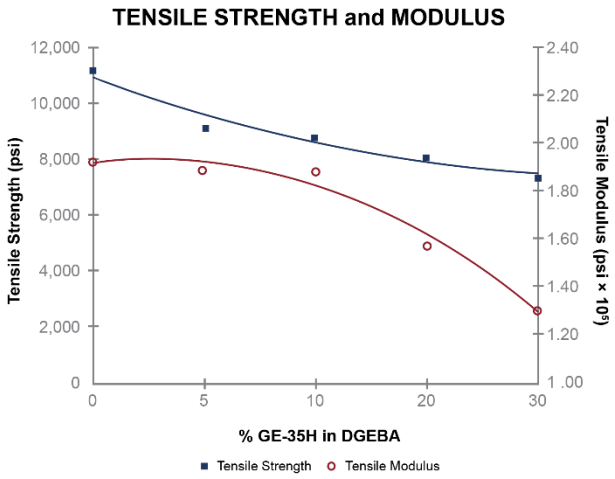
Performance Data

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

The effect of ERISYS® GE-35H on the cured properties of ARALDITE® cured with ARADUR® HY 951.

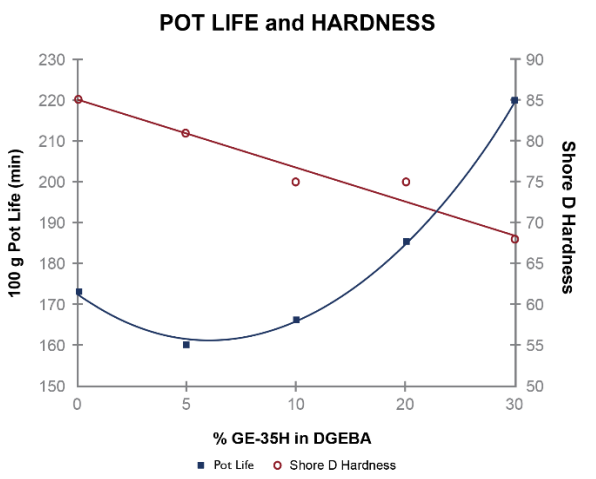


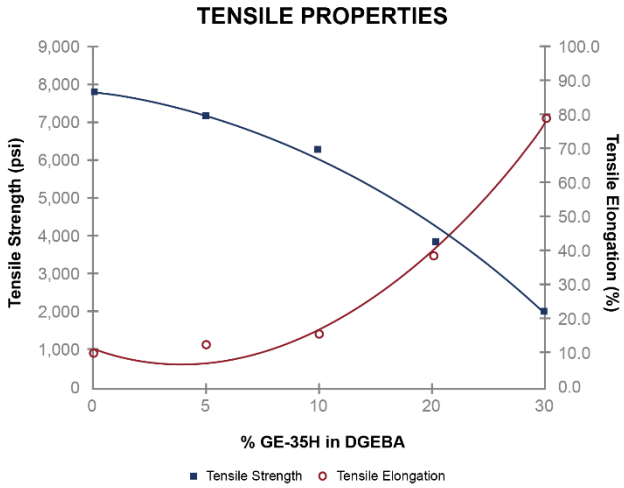


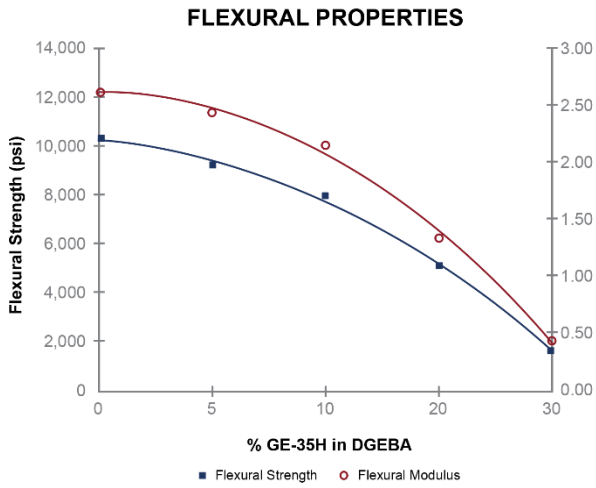


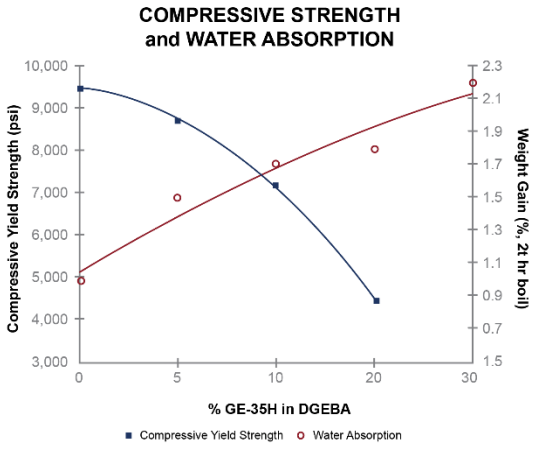
Physical Properties Report	ERISYS® GE-35H in ARALDITE® GY 260				
ARALDITE® GY 260	100	95	90	80	70
ERISYS® GE-35H	0	5	10	20	30
ARADUR® HY 951	13.0	12.5	11.8	10.9	10.0
Resin Viscosity at 25 °C (mPa.s)	12,700	7,500	5,875	3,000	2,050
100 g Gel Time (min)	48	44	42	40	40
Tensile Strength (MPa)	78	63	62	57	51
Tensile Elongation at break (%)	8.1	6.2	6.2	7.5	17.6
Tensile Modulus (MPa)	1379	1351	1358	1117	917
Flexural Strength (MPa)	87	99	90	85	62
Flexural Modulus (MPa)	2420	2455	2275	2027	1413
Compressive Yield Strength (MPa)	107	99	94	83	x
Compressive Modulus (MPa)	1579	1572	1441	1434	1124
Shore D Hardness	85	85	86	85	75
Tg (°C)	116	111	97	87	84
Water Absorption (28 days at RT) %	0.7	0.8	1.0	1.2	1.6
Water Absorption (2 hours boil) %	0.6	1.2	1.5	1.7	1.9

The effect of ERISYS® GE-35H resin on the cured properties of ARALDITE® GY 260 cured with reactive Polyamidoamine (typically blend of ARADUR® 350 and ARADUR® 370) for a flexibilized formulation.









Physical Properties Report	ERISYS GE-35H in ARALDITE® GY 260				
ARALDITE® GY 260	100	95	90	80	70
ERISYS GE-35H	0	5	10	20	30
Reactive Polyamidoamine blend	48.6	47.7	45.2	41.8	38.3
Resin Viscosity @ 25 °C (mPa.s)	12,700	7,900	5,500	3,200	1,400
100 g Gel Time (min)	174	160	167	186	220
Tensile Strength (MPa)	54	50	44	27	15
Tensile Elongation at break (%)	10.4	11.2	15.7	39.3	79.3
Tensile Modulus (MPa)	972	917	841	551	78
Flexural Strength (MPa)	71	63	56	35	12
Flexural Modulus (MPa)	1806	1675	1482	931	131
Compressive Yield Strength (MPa)	66	60	50	31	x
Compressive Modulus (MPa)	1317	1234	1027	676	67
Shore D Hardness	85	81	75	75	68
Water Absorption (28 days @ RT) %	0.9	1.2	1.4	1.8	2.1
Water Absorption (2 hours boil) %	1.0	1.5	1.7	1.8	2.2

Storage

ERISYS® GE35H should be stored in a dry place, preferably in the sealed original container, at temperatures between 2 and 40 °C. The product should not be stored exposed to direct sunlight.

Handling precautions

Mandatory and recommended industrial hygiene procedures should be followed whenever our products are being handled and processed. For additional information please consult the corresponding product safety data sheets and the brochure "Hygienic precautions for handling plastics products".

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