

Advanced Materials

ERISYS® GS 110

Specialty components

DATA SHEET

Monofunctional, aliphatic, reactive diluent for epoxy resins

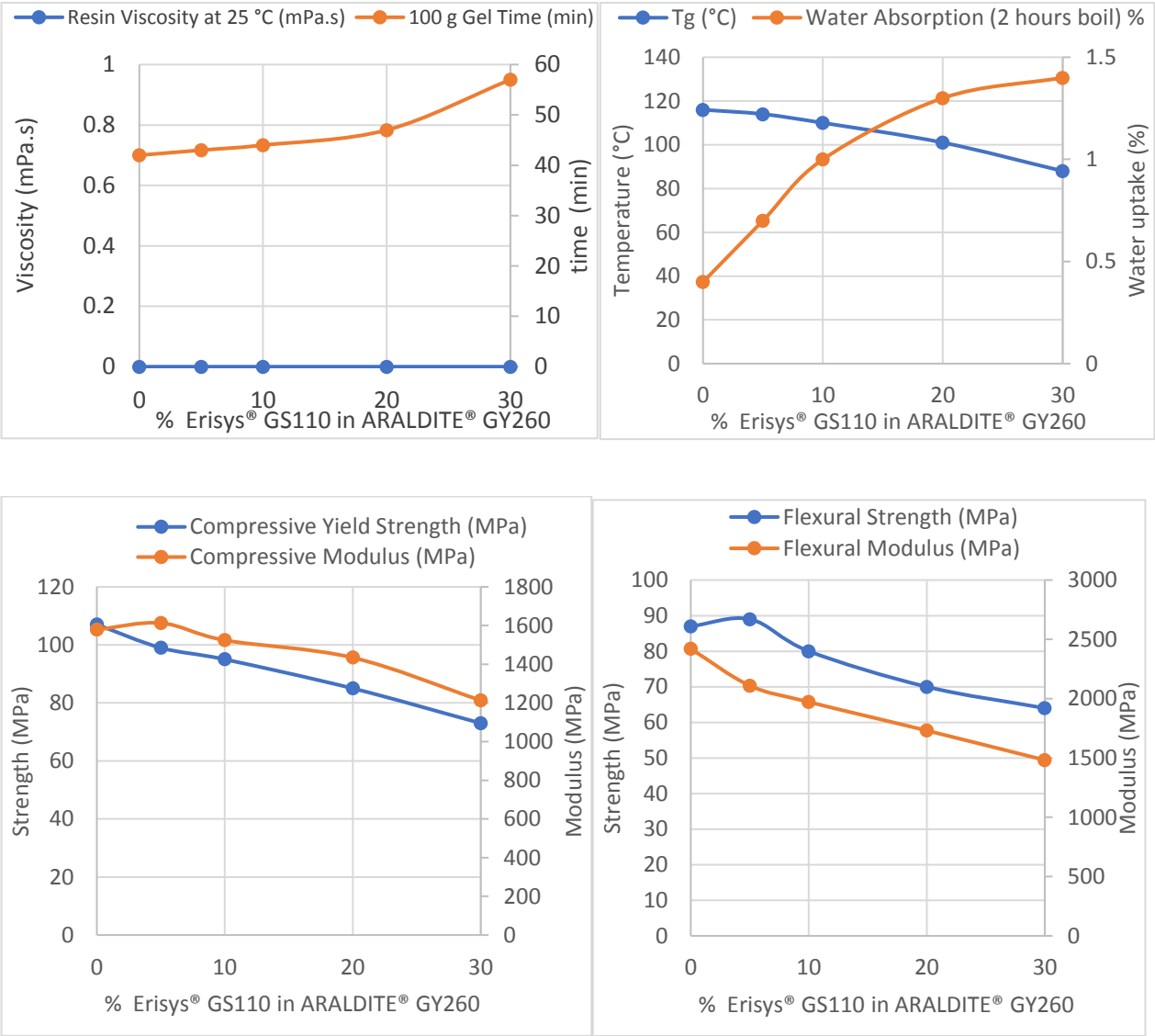
Applications	Can be mixed with unmodified bisphenol-A or bisphenol-A/F epoxy resins to formulate low-viscosity epoxy resins for solvent-free coatings, flooring screeds and mastics. A further advantage of this diluent is its low hazard potential in terms of industrial hygiene; it is better than any other reactive diluent in this respect.																																																																						
Properties	Reactive diluents have low viscosity owing to their low molecular weight. Their vapour pressure is higher and their physiological effectiveness greater than that of unmodified epoxy resins. The use of ERISYS® GS 110 in surface technologies has the following effects, according to the amount included: <ul style="list-style-type: none">a very clear reduction in viscosity and reactivityuniformly good film surface quality (partly dependent on the hardener)a clear improvement in processabilitya moderate to good increase in flexibilitya reduction in resistance to hot water and to chemicals.																																																																						
Key data	<table><tr><td colspan="4">Specified key data</td></tr><tr><td>Appearance (visual)</td><td colspan="3">clear liquid</td></tr><tr><td>Colour (APHA)</td><td colspan="3">≤ 50</td></tr><tr><td>Water contente (Karl fischer titration)</td><td>< 0.1</td><td></td><td>[%]</td></tr><tr><td>Epoxy equivalent (Titration)</td><td>238 - 256</td><td></td><td>[g/Eq]</td></tr><tr><td>Viscosity at 25 °C (Brookfield)</td><td>5 - 15</td><td></td><td>[mPa s]</td></tr><tr><td colspan="4">Specified key data are individually checked throughout and guaranteed.</td></tr><tr><td colspan="4">Typical key data</td></tr><tr><td>Medium epoxy equivalent composition (ISO 3001)</td><td>247</td><td></td><td>[g/Eq]</td></tr><tr><td>Flash point (Pensky Martens, ISO 2719)</td><td>~ 126</td><td></td><td>[°C]</td></tr><tr><td>Easily Hydrolysable Chloride</td><td><0.3</td><td></td><td>%</td></tr><tr><td>Epichloridrine max</td><td>25</td><td></td><td>ppm</td></tr><tr><td>As-supplied form</td><td colspan="3">liquid</td></tr><tr><td>Odour</td><td colspan="3">slight</td></tr><tr><td>Shelf life (at storage temperature between 2 - 40 °C) (see expiry date on original container)</td><td colspan="3">several years</td></tr><tr><td>Hazardous decomposition products (when disposed of in fire)</td><td colspan="3">carbon monoxide, carbon dioxide, nitrogen oxides and other toxic gases and vapours</td></tr><tr><td>Disposal</td><td colspan="3">regular procedures approved by local authorities</td></tr></table>			Specified key data				Appearance (visual)	clear liquid			Colour (APHA)	≤ 50			Water contente (Karl fischer titration)	< 0.1		[%]	Epoxy equivalent (Titration)	238 - 256		[g/Eq]	Viscosity at 25 °C (Brookfield)	5 - 15		[mPa s]	Specified key data are individually checked throughout and guaranteed.				Typical key data				Medium epoxy equivalent composition (ISO 3001)	247		[g/Eq]	Flash point (Pensky Martens, ISO 2719)	~ 126		[°C]	Easily Hydrolysable Chloride	<0.3		%	Epichloridrine max	25		ppm	As-supplied form	liquid			Odour	slight			Shelf life (at storage temperature between 2 - 40 °C) (see expiry date on original container)	several years			Hazardous decomposition products (when disposed of in fire)	carbon monoxide, carbon dioxide, nitrogen oxides and other toxic gases and vapours			Disposal	regular procedures approved by local authorities		
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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® GS 110 will affect the handling and cured properties of resin formulations. The effects of these changes are shown below.

The effect of ERISYS® GS 110 on the cured properties of ARALDITE® cured with ARADUR® HY 951.



Physical Properties Report		ERISYS® GS110 in ARALDITE® GY 260			
ARALDITE® GY 260	100	95	90	80	70
ERISYS® GS110	0	5	10	20	30
ARADUR® HY 951	13.0	12.8	12.6	12.3	12
Resin Viscosity at 25 °C (mPa.s)	12,700	5,400	2,700	900	350
100 g Gel Time (min)	42	43	50	64	90
Tensile Strength (MPa)	78	79	73	68	51
Tensile Elongation at break (%)	8.1	9.6	8.2	7.8	8
Tensile Modulus (MPa)	1379	1344	1351	1338	1076
Flexural Strength (MPa)	87	83	93	88	70
Flexural Modulus (MPa)	2420	2317	2420	2386	1902
Compressive Yield Strength (MPa)	107	93	80	79	67
Compressive Modulus (MPa)	1579	1469	1448	1468	1448
Shore D Hardness	85	86	87	81	79
Tg (°C)	116	107	96	66	48
Water Absorption (28 days at RT) %	0.3	0.8	0.8	0.9	2.1
Water Absorption (2 hours boil) %	0.4	0.7	1.0	1.7	2.2

Storage	ERISYS® GS 110 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".

Huntsman Advanced Materials

(Switzerland) GmbH
Klybeckstrasse 200
4057 Basel
Switzerland

Tel: +41 (0)61 299 11 11
Fax: +41 (0)61 299 11 12

www.huntsman.com/advanced_materials
Email: advanced_materials@huntsman.com



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