

DION® 9100

Bisphenol-A Epoxy based Vinyl Ester Resin

DESCRIPTION

DION® 9100 is a non-accelerated Bisphenol-A epoxy based vinyl ester resin. The chemical resistance is very good, particularly towards acids, alkalis and oxidizing agents.

The outstanding adhesive properties, toughness and fatigue properties make it suitable for production of tanks, pipes and process equipment.

APPLICATION

The most current production methods are hand lay-up, pultrusion and filament winding.

FEATURES

- Epoxy based vinyl ester resin
- High strength and good toughness
- Excellent hydrolytic stability
- Low viscosity
- Good curing
- Approvals

BENEFITS

- Excellent chemical resistance to a wide variety of corrosive environments
- High mechanical properties
- High elongation and good crack resistance
- Good fatigue resistance
- Very low water absorption
- Improved glass fibre wet-out
- Good final cure even with relatively long gel times
- Det norske Veritas, DNV – Grade1
- Lloyds Register of Shipping

The information herein is general information designed to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to contents and suitability for their specific applications. We warrant that our products will meet our written specifications. **Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness for a particular purpose**, nor is any protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is limited to replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.

TYPICAL PROPERTIES

PHYSICAL DATA IN LIQUID STATE AT 23°C

Properties	Unit	Value	Test method
Viscosity - Brookfield LVF sp. 2/12 rpm - Cone & Plate	mPa·s mPa·s	500-650 550-650	ASTM D 2196-86 ISO 2884-1999
Density	g/cm ³	1.02-1.06	ISO 2811-2001
Acid Value	mgKOH/g	max. 9	ISO 2114-1996
Styrene Content	% weight	43-47	B070
Flash Point	°C	32	ASTM D 3278-95
Gel time: 3% Acc. 9802 (1% Co) 2% NORPOL PEROXIDE 11 or 2% Butanox LPT	minutes	20-30	G020
Storage Stability from date of manufacture	months	6	G180

TYPICAL GEL TIMES WITH VARYING CURING SYSTEMS AT 23°C

Curing system	A	B	C	D	E
DION® 9100	100	100	100	100	100
Acc. 9802 (Cobalt 1%)	3	3	2	2	2
Acc. 9826 (DMA 10%)	-	-	0.5	0.5	0.5
Inhibitor 9853 (TBC 10%)	-	0.2	-	0.2	-
NORPOL PEROXIDE 11	2	2	2	2	-
NORPOL PEROXIDE 24	-	-	-	-	2
Gel time, minutes	24	42	22	34	21

In order to avoid foaming, you may use NORPOL Peroxide 24 or Trigonox 239 as an alternative to NORPOL Peroxide 11 or Butanox LPT.

Other brands of MEKP with high dimer content have also been used successfully. A thorough evaluation of initiator characteristics is suggested prior to fabrication.

TYPICAL CLEAR CASTING PROPERTIES AT 23°C

Fully post cured

Properties	Unit	Value	Test method
Tensile Strength	MPa	80	ISO 527-1993
Tensile Modulus	MPa	3400	ISO 527-1993
Tensile Elongation	%	5	ISO 527-1993
Flexural Strength	MPa	145	ISO 178-2001
Flexural Modulus	MPa	3200	ISO 178-2001
Heat Distortion Temperature	°C	100	ISO 75-1993
Hardness, Barcol 934-1, min.	-	35	ASTM D 2583-99
Water Absorption (28 days)	%	0.55	ISO 62-1980

TYPICAL LAMINATE* PROPERTIES

Properties	Unit	Value	Test method
Glass Content	%	33	-
Tensile Strength	MPa	125	ISO 527-1993
Tensile Modulus	MPa	7800	ISO 527-1993
Tensile Elongation	%	2.1	ISO 527-1993
Flexural Strength	MPa	200	ISO 178-2001
Flexural Modulus	MPa	7300	ISO 178-2001

* 5 mm laminate, 6 x 450 g/m² CSM

STORAGE

To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 24°C/75°F and away from heat ignition sources and sunlight. Resin should be warmed to at least 18°C/65°F prior to use in order to assure proper curing and handling. All storage areas and containers should conform to local fire and building codes. Copper or copper containing alloys should be avoided as containers. Store separate from oxidizing materials, peroxides and metal salts. Keep containers closed when not in use. Inventory levels should be kept to a reasonable minimum with first-in, first-out stock rotation.

Additional information on handling and storing unsaturated polyesters is available in Reichhold’s application bulletin “Bulk Storage and Handling of Unsaturated Polyester Resins.” For information on other Reichhold resins or initiators, contact your sales representative or authorized Reichhold distributor.

SAFETY

READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET BEFORE WORKING WITH THIS PRODUCT

Obtain a copy of the material safety data sheet on this product prior to use. Material safety data sheets are available from your Reichhold sales representative. Such information should be requested from suppliers of all products and understood prior to working with their materials.

DIRECTLY MIXING ANY ORGANIC PEROXIDE WITH A METAL SOAP, AMINE, OR OTHER POLYMERIZATION ACCELERATOR OR PROMOTER WILL RESULT IN VIOLENT DECOMPOSITION