PRODUCT BULLETIN

DPB019/014

DION® IMPACT 9100-15

Bisphenol-Epoxy Vinyl Ester Resin
Thixotropic and Un-accelerated

DESCRIPTION

DION® IMPACT 9100-15 is a non-accelerated and Thixotropic bisphenol-A epoxy vinyl ester resin. The chemical resistance is very good, particularly towards acids, alkalis and oxidizing agents. The outstanding adhesion properties, toughness and fatigue resistance properties make DION IMPACT 9100-15 suitable for production of tanks, pipes and process equipment.

APPLICATION

DION® IMPACT 9100-15 is designed for application by hand lay-up and filament with minimal sag.

FEATURES	BENEFITS
• Premium epoxy vinyl ester resin	• Excellent chemical resistance to a wide variety of corrosive environments • High toughness and good crack resistance • Good mechanical properties • Good high temperature stability • Compatible with both aramide and carbon fibres • Excellent resin colour
• Good curing	• Short demoulding times and good final cure • Reduced accelerator levels required in comparison with DION® 9100
• Storage stability	• Improved shelf-life
• Thixotropic	• Minimal sag

TYPICAL PROPERTIES

PHYSICAL DATA IN LIQUID STATE AT 25°C

Properties	Unit	Value	Test Method
Viscosity: Brookfield LVF sp. 2/12 rpm - Cone & Plate - Thixotropic Index (Brkfld / C&P)	mPa's (cP) mPa's (cP ratio	1000-1300 300-330 3.3 – 3.9	ASTM D 2196-86 ISO 2884-1999
Density	g/cm^3	1.02-1.06	ISO 2114-1996
Acid Value	mgKOH/g	Max.9	ISO 2114-1996
Styrene Content	% weight	46-50	B070
Flash point	°C	32	ASTM D 3278-95
Colour	Hazen	40-70	ISO 2211-1973
Gel time: 0.6% NCS Ultracure AC2 (Cobalt 1%) 2% CUROX M100	minutes	20 - 30	G020
Storage Stability from date of manufacture	months	6	G180

TYPICAL GELTIMES WITH VARYING CURING SYSTEMS AT 25°C

Curing system	A	B*	C*
DION® IMPACT 9100-15	100	100	100
NCS Ultracure AC1 (Cobalt 6%)			0.5
NCS Ultracure AC2 (Cobalt 1%)	3.0	3.0	-
NCS Ultracure AA3 (DMA)	-	0.14	-
NCS Ulracure AA8 (DMA 10%)	-	-	1.4
NCS Inhibitor, Solution T (33.3% THQ)	-	0.09	0.09
Akzo Butanox LPT	2.0	2.0	2.0
Geltime, minutes	20-30	20-30	20-30

* Formulation B and C is used when good cure in thin laminates is required.
Do not use less than 1.0phr Catalyst. Use inhibitor Solution T in increments of 0.02% on resin to increase geltime by ~3 – 5 minutes.

TYPICAL CLEAR CASTING PROPERTIES AT 23°C

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 D2583-99
Water Absorption (28 days)	%	0.55	ISO 62-1980

TYPICAL LAMINATE* PROPERTIES AT 23°C

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/m^2 CSM

Post cure is recommended in order to achieve optimum properties of vinyl ester resins. See table on page
14 of Reichhold's "Chemical Resistance Guide".

STORAGE

To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 24°C and away from heat ignition sources and sunlight. Resin should be warmed to at least 18°C 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 NCS Resins application bulletin "Bulk Storage and Handling of Unsaturated Polyester Resins". For information on other NCS Resins resins or initiators, contact your sales representative or authorized NCS Resins 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 NCS Resins 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.

STANDARD PACKAGE

Non returnable metal drums.
Bulk supplies can be delivered by road tanker.

NCS RESINS BRANCHES AT:

JOHANNESBURG / DURBAN / CAPE TOWN / PORT ELIZABETH