

## Tough resins for harsh environments

DION® — VINYL ESTER PRODUCTS THAT STAND UP TO CORROSION

**DION®  
IMPACT 9133**

The best solution  
to corrosion problems

**DION®  
IMPACT 9400**

Best with solvents

**DION® 9700**

When the temperature  
gets high

## DION® IMPACT 9133

DION® IMPACT 9133 is a premium bisphenol A epoxy-based vinyl ester resin which has been designed to give additional benefits in comparison to standard bisphenol A epoxy-based vinyl ester resin:

- Very low-foaming system curable with standard MEK peroxide
- Improved heat deflection temperature (HDT)
- Lower styrene content

Belonging to the Impact family, DION® IMPACT 9133 is characterized by lighter colour, as well as an improved shelf-life, well-balanced/high reactivity with good final cure and shorter de-moulding times. It is a very low foaming vinyl ester resin that also can be cured using standard methyl ether ketone peroxide (MEKP) such as Butanox M50, NORPOL® Peroxide 1 or similar products.

Its heat deflection temperature (HDT) of 112°C is up to 10-12°C higher than that of standard vinyl ester resins extending the possibilities to use the DION® IMPACT 9133 resin at higher temperatures. Compared to the standard vinyl ester resin, its styrene content is lower, which reduces styrene emissions during the fabrication process.

DION® IMPACT 9133 exhibits excellent chemical resistance to a wide variety of corrosive environments including acids, alkalis and oxidizing agents. It assures good mechanical properties with high toughness and good crack resistance as well as excellent thermal properties. It shows excellent wetting of glass fibre reinforcement and good compatibility to carbon and aramid fibres. The outstanding adhesive properties, toughness and fatigue properties in combination with its chemical resistance make this resin a very good choice for many applications and mostly for production of tanks, pipes and process equipment to be used in challenging working conditions.

DION® IMPACT 9133 has been tested based on many norms and it is classified as belonging to:

- EN 13121/1 - Group 7A
- DIN 16946/2 - Type 1310
- DIN 18820/1 - Group 5

The chemical composition of DION® IMPACT 9133 has been classified to be in accordance with the positive lists of

- "Guideline for the Hygienic Assessment of Organic Material in contact with drinking water (KTW Guideline)" Umweltbundesamt (UBA) by Technologiezentrum Wasser (TZW)



## AVAILABLE GRADES AND APPLICATIONS

To better handle different demands in curing profile and rheology more grades are available on shelf while specific tailor-made grades could be developed on demand. Please discuss this opportunity with our commercial personnel.

DION® IMPACT 9133-00 is non-promoted and non-thixotropic specifically suggested for anticorrosion. Our technical staff will help you in determining the best curing system based on your requirements adapting its use to major technologies like e.g. Filament Winding, Centrifugal Casting, Lamination.

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DION® IMPACT 9133-800 is thixotropic and pre-accelerated. The incorporated accelerator system minimizes the foaming normally occurring when using MEKP and gives relative short gel time and rapid curing. The use of this grade with other catalyst such as NORPOL® PEROXIDE 11 or Butanox LPT is also possible. The resin is especially formulated for hand lay-up and spray-up processes and impregnates both glass, carbon and aramide fibres rapidly. It is easily worked and will minimize drain off, making it ideal for large, vertical applications like boat and swimming pool walls. The recommended laminate thickness applied wet-on-wet should be between 2 and 6 mm.

DION® IMPACT 9133-200 is thixotropic and non-accelerated showing the same thixotropic properties as DION® IMPACT 9133-800 but giving the manufacturer the possibility to adjust the curing system to its specific needs. It is formulated for hand lay-up and spray-up requirements with minimized drain off.

## PHYSICAL DATA IN LIQUID STATE AT 23°C

	Unit	DION® IMPACT 9133-00	DION® IMPACT 9133-200	DION® IMPACT 9133-800	Test Method
Description	-	Non-promoted resin	Thixotropic resin	Promoted and thixotropic resin	
Viscosity at 23°C, - Brookfield LVF sp. 2/12 rpm - ICI Cone & Plate	mPa.s (cP)	400-600	1100-1300 300-3320	1100-1300 300-330	ASTM D 2196
Density at 23°C	g/cm <sup>3</sup>	1.02-1.06	1.02-1.06	1.02-1.06	ISO 2811-2001
Acid number	mgKOH/g	10-30	10-30	10-30	ISO 2114-1996
Styrene content	% weight	36-39	41-45	41-45	B070
Flash point	°C	32	32	32	ASTM D 3278-95
Storage stability	Months	6	3	3	G180
Geltime at 23°C	Min	0.6 phr 1% Co + 2 phr Butanox M50 25-35 min	0.6 phr 1% Co + 2 phr Butanox M50 25-35 min	2 phr Butanox LPT or M50 18-30 min	G020

## TYPICAL PROPERTIES OF POST CURED CLEAR CASTING MEASURED AT 23°C

Properties	Unit	DION® IMPACT 9133-00	DION® IMPACT 9133-800	Test Method
Tensile Strength	MPa	80	80	ISO 527-1993
Tensile Modulus	MPa	3350	3350	ISO 527-1993
Tensile Elongation	%	4-5	3-5	ISO 527-1993
Flexural Strength	MPa	135	135	ISO 178-2001
Flexural Modulus	MPa	3400	3400	ISO 178-2001
Heat Distortion Temperature	°C	112	112	ISO 75-1993
Hardness, Barcol 934-1, min.	-	40	40	ASTM D 2583-99
Curing system	-	0.6 phr 1% Co + 2 phr NORPOL® PEROXIDE 11 or Butanox M50	2 phr NORPOL® PEROXIDE 11 or Butanox M50	
Curing schedule		24hr at 23°C, 24hr at 65°C, 1hr at 90°C, 3hr at 120°C	24hr at 23°C, 24hr at 65°C, 1hr at 90°C, 3hr at 120°C	

The information herein is to help customers determine whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before using them to satisfy themselves as to contents and suitability. 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 protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials, and in no event shall we be liable for special, incidental, or consequential damages.