

# DION<sup>®</sup> 6631

## Isophthalic Polyester Resin

### DESCRIPTION

The DION<sup>®</sup> 6631 series are prepromoted, thixotropic, corrosion and temperature-resistant isophthalic polyester resins. These versatile products feature a high molecular weight and crosslink density and offer good corrosion resistance in a variety of aqueous and acidic media. The performance of DION<sup>®</sup> 6631 has been proven by over 30 years of successful service.

### APPLICATION

DION<sup>®</sup> 6631 can be used in areas requiring good corrosion resistance to a variety of acidic and aqueous media via spray-up or hand lay-up application. For a complete list of chemical resistance service see the DION<sup>®</sup> Corrosion Resin Selection and Design Guide.

### FEATURES

- High molecular weight isophthalic polymer for good corrosion resistance and strength retention at elevated temperatures
- Contains no esterification catalyst for improved hydrolytic stability
- Chemical components listed under FDA 177.2420 Title 21 making it suitable for use in food and beverage contact applications
- Laminates based on DION<sup>®</sup> 6631 can meet BS6920 requirements, usable in many potable water applications
- Laminates can meet MIL-R-7575C Grade A and B with Class 0 and 3 electrical properties, approved for use in military applications
- Manufactured using statistical controls in ISO-9002 certified plants for consistent batch to batch performance

**CORROSION HOTLINE:** For more information on this and other corrosion-resistant resins, call our CORROSION HOTLINE 1-800-752-0060 at our corporate laboratory in Research Triangle Park, North Carolina.

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.

**PROPERTIES**

**TYPICAL LIQUID PROPERTIES<sup>1</sup> @ 25°C**

VERSION	WEIGHT % NV	VISCOSITY* CPS	THIX INDEX*	SPECIFIC GRAVITY	77° F GEL TIME MINUTES	TIME TO PEAK	PEAK EXOTHERM °F
6631-00	50 - 53	450 - 650	2 - 3	1.04 - 1.08	13.5 - 16.5 **	24 - 31	330 - 360
6631-02	50 - 53	450 - 550	2 - 3	1.05 - 1.10	18 - 22 **	28 - 38	325 - 355
6631-03	50 - 53	550 - 600	2 - 3	1.05 - 1.10	25 - 30 **	8.5 - 18.5	320 - 350
6631-20	52.5 - 55.5	500 - 700	1.8 - 2.2	1.04 - 1.08	13.5 - 16.5 **	24 - 31	330 - 360
6631-30	52.5 - 55.5	500 - 700	1.8 - 2.2	1.04 - 1.08	28 - 32 ***	44 - 54	360 - 400
6631-45	50 - 53	400 - 550 +	2 - 3	1.04 - 1.08	12 - 15****	16 - 24	375 - 410

\* Brookfield RVF viscometer, #2 spindle @ 20 rpm – 2:20 rpm thix ratio

\*\* Catalyzed with 1.25% by weight with DDM-9, 50 grams of resin.

\*\*\* Catalyzed with 1.25% by weight with DDM-9, 100 grams of resin

\*\*\*\* Catalyzed with 1.25% by weight of Norac 925H, 100 grams of resin

+ Brookfield LVF viscometer, #3 spindle @ 60 rpm – 6:60 rpm thix ratio

*Seta Closed Cup Flash Point of DION® 6631 resins is 31.6° C (89° F)*

*DION® 6631-20 meets the requirements of SCAQMD Rule 1162*

Note: Some versions of DION® 6631 may have minimum order quantity restrictions. For more information contact your local Reichhold representative or approved Reichhold distributor.

**TYPICAL MECHANICAL CHARACTERISTICS<sup>1</sup>**

Property	Test Method	1/8" Clear Casting	1/8" Laminate
Barcol Hardness	D-2583	40	45*
Heat Deflection Temperature, °F (°C)	D-648	225 (107.2)	N/A
Flexural Strength @ 77° F, psi	D-790	16,600	31,400*
Flexural Modulus @ 77° F, x 10 <sup>6</sup> psi	D-790	0.52	1.3*
Tensile Strength @ 77° F, psi	D-638	9,300	17,900*
Tensile Modulus @ 77° F, x 10 <sup>6</sup> psi	D-638	0.59	1.2*
Tensile Elongation @ Break, %	D-638	2.4	N/A
Compressive Strength @ 77° F, psi	D-695	N/A	28,400*
<b>@ -45° F</b>			
Flexural Strength, psi	D-790	N/A	36,200**
Flexural Modulus, x 10 <sup>6</sup> psi	D-790	N/A	1.391**
Tensile Strength, psi	D-638	N/A	18,400**
Tensile Modulus, x 10 <sup>6</sup> psi	D-638	N/A	1.522**
Tensile Elongation at Break, %	D-638	N/A	1.79**
Compressive Strength, psi	D-695	N/A	28,900**
Compressive Modulus, x 10 <sup>6</sup> psi	D-695	N/A	1.925**
<b>@ -90° F</b>			
Flexural Strength, psi	D-790	N/A	38,400**
Flexural Modulus, x 10 <sup>6</sup> psi	D-790	N/A	1.363**
Tensile Strength, psi	D-638	N/A	17,900**
Tensile Modulus, x 10 <sup>6</sup> psi	D-638	N/A	1.510**
Tensile Elongation at Break, %	D-638	N/A	2.12**
Compressive Strength, psi	D-695	N/A	32,900**
Compressive Modulus, x 10 <sup>6</sup> psi	D-695	N/A	2.190**

\*Laminate construction: 4 plies of 1.5 oz/ft<sup>2</sup> chopped strand mat. Glass content: 35% by weight: Thickness: 0.125"

\*\*Laminate construction: 3 plies of 1.5 oz/ft<sup>2</sup> chopped strand mat. Glass content: 32.4% by weight: Thickness 0.090"

<sup>1</sup> Properties reported in this bulletin are typical of those obtained in controlled laboratory tests and are provided as guidelines.

**TYPICAL LAMINATE PERFORMANCE AT ELEVATED TEMPERATURES<sup>1</sup>**

Temperature °F	Flexural Strength, psi	Flexural Modulus, x10 <sup>6</sup> psi	Tensile Strength, psi	Tensile Modulus, x10 <sup>6</sup> psi
77	31,000	1.38	19,900	1.63
150	28,600	1.20	22,500	1.51
200	24,000	0.85	25,000	1.38
250	14,700	0.50	17,000	0.87
300	4,300	0.30	13,200	0.87

Laminate Construction: V/M/M/WR/M/WR/M/M Thickness: 0.25", Glass content: 40% by weight  
(V = 10-mil C-glass veil, M = 1.5 oz/ft<sup>2</sup> chopped strand mat, WR = 24-oz/yd<sup>2</sup> woven roving)

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**STORAGE**

Keep away from ignition sources: flames, pilot lights, electrical sparks, and sparking tools. NO SMOKING. Do not store in direct sunlight. Store separately from oxidizing materials, peroxides, and metal salts. Keep container closed when not in use. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 75°F (25°C). Copper or copper containing alloys should be avoided as containers. Inventory levels should be kept to a reasonable minimum with first-in, first-out stock rotation. Shelf Life can be two to three months. Minimum shelf life performance refers to product in the original, unopened, container. Shelf stability is affected by storage conditions.

**PACKAGING FORM**

Non-returnable 55-gallon metal drums (500 lbs. net) or 40,000-44,000 lb. tank truck.

**SAFETY**

**NEVER ADD METAL SALTS (PROMOTERS) OR PROMOTED RESINS TO A PEROXIDE.** When adding peroxides to a resin solution, promptly and thoroughly mix the resulting product. Never add organic peroxides to a hot diluent or process. Prevent contamination with foreign materials, including without limitation, accelerators or promoters (such as dimethyl aniline, other amines, and cobalt compounds), heavy-metal oxides or salts (particularly those of cobalt, iron, and copper), strong acids, and sanding dusts. Use containers made of glass, polypropylene, Teflon™, polyethylene, or ceramic to prevent contamination of this material during its handling. Reichhold's Environmental Health and Safety Hotline 1-800-275-6353.

**TECHNICAL SUPPORT**

For technical support, call 1-800-408-8346.

General product information is available on Reichhold's website at <http://www.Reichhold.com>