REICHHOLD

PRODUCT BULLETIN

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DION® FR 844-030

DESCRIPTION

DION® FR 844-030 is a HET Acid based, UV Stabilized, polyester specifically developed for the manufacture of roofing sheets where a very high degree or fire retardancy is required.

In order to obtain the best possible clarity the glass mat must be clean dry, and have a suitable high solubility binder for roofing sheet production. Maximum clarity is dependant on the state of cure of the resin and it is usually obtained over 24 hours at ambient temperature, however to obtain this more quickly a post bake (i.e. 4 hours at 60°C) is desirable.

DION® FR 844-030 achieves a Class I surface spread of flame when tested to B.S. 476 Part 7.

Similar to paints, the colour and appearance of unsaturated polyester resin products are affected by long term exposure to sunlight. Products of this type are chemically modified and contain proprietary UV absorbers to give extended weather stability and minimise any visual change.
UV absorbers work by preferentially absorbing the UV component of the sunlight, however, this is not 100% effective and with time the UV absorber is overcome. The rate depends on the actual climatic conditions experienced, resulting in possible colour change and/or surface degradation.

Fire retardant grades, depending on the level of fire retardancy, are more prone to attack by UV light than non-fire retardants, due to the presence of halogenated compounds.

If the sheeting is to be used for long term external application, some additional protection is required on the exposed surface.
It is recommended that a surface tissue is incorporated into the laminate to ensure that one side has a resin-rich surface. GRP Sheeting should always be installed with the resin-rich surface on the exposed side.

Alternatively Melinex or PTFE should be incorporated on the exposed side in accordance with recommendation from the suppliers I.C.I. or Dupont

919-990-7500 • 800-448-3482 • P.O. Box 13582, Research Triangle Park, NC 27709 USA • 2400 Ellis Road, Durham, NC 27703 USA • www.reichhold.com

Reichhold UK Ltd., 54 Willow Lane, Mitcham, Surrey CR4 4NA, England, Tel. +44(0)208 648 4684, Fax +44(0)208 640 6432

TYPICAL PROPERTIES

PHYSICAL DATA IN LIQUID STATE AT 23°C

Properties	Unit	Value	Test method
Viscosity - ICI Cone and Plate	Cps	480-520	BS 2782: Part 7: Method 730B: 1994
Density	g/cm³	1.28	BS 3900: Part A12: 1975
Acid Value	Mg/KOH/g	< 30	BS 2782: Part 4: Method 432B: 1976
Colour	Hazen	200 Max	
Appearance		Clear	
Monomer		Styrene	
Non-Volatile Content	%	65-69	BS 6782: Part 1: 1987
Flash Point	°C	31.5	BS 3900: Part A9: 1986
Gel time: 2% Butanox M50 3% 1% Cobalt	minutes	8-11	BS 2782: Part 8: Method 835C: 1980
Storage Stability at 20°C from date of manufacture	months	6	

All products are Quality Controlled with the specified catalyst. However, alternatives are available and all users should be aware that a single catalyst formulation cannot provide optimum results in all resin systems. The interaction between the catalyst and the inhibitor/accelerator systems used in our products is complex and varies from resin to resin. Consequently the gel and cure characteristics provided by alternate catalysts can vary greatly from those specified. It is, therefore, absolutely essential that the user evaluate each alternate catalyst in each product before full-scale manufacture is started.

TYPICAL NON-REINFORCED CASTING PROPERTIES

Fully postcured

Properties	Unit	Value	Test method
Tensile strength	N/mm²	65	BS 2782: Part 3: Method 320C: 1976
Tensile elongation	%	3	BS 2782: Part 3: Method 320C: 1976
Flexural strength	N/mm²	95	BS 2782: Part 3: Method 335A: 1978
Flexural modulus	N/mm²	4000	BS 2782: Part 3: Method 335A: 1978
Volume shrinkage	%	6-8	BS 2782: Part 6: Method 644A: 1986
Heat distortion temp.	°C	70	BS 2782: Part 1: Method 121A: 1991
Hardness Barcol	934-1	45	BS 2782: Part 10: Method 1001:1977
Water absorption – 7 days	Mg	20	BS 2782: Part 4: Method 430A: 1983

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