

REAFREE® 4002-S

POWDER COATINGS / TGIC

TECHNICAL DATA SHEET

Product Application details

Saturated carboxylated polyester for combination with Triglycidylisocyanurate. Suitable for the formulation of outdoor durable and protective thermosetting powders for electrostatic application.
For mat paints by dry-blend with REAFREE 4401-S.
High cross-linking density. Gas oven stabilised.
TMA free type.

Performance Benefits

- Very good flow.
- Good mechanical properties.
- Good outdoor durability.
- Excellent over-bake resistance in direct gas fired ovens.

Polymer Type

- Saturated Carboxylated Polyester Resin

Sales Specifications

Colour (50%), (ASTM D-1544)	2 max
Acid value, mg KOH/g (ASTM D-1639)	45 - 50
Viscosity 165°C, Pa.s (ICI – DIN 53229)	15 - 30

Other Characteristics¹

Appearance	Pale granules
Glass Transition T _g , °C (DSC - T _g)	approx 59

¹ The data provided for these properties are typical values, intended only as guides, and should not be construed as sales specifications

Curing Conditions 10 minutes at 200°C (object temperature)

Recommended Mixing Ratio

REAFREE 4002-S / TGIC : 90/10

Starting Formulation

	A	B
REAFREE 4002-S	576	---
REAFREE 4401-S	---	614
Titanium Dioxide ⁽¹⁾	320	320
Triglycidylisocyanurate ⁽²⁾	64	26
REAFREE F3300-A15	37	37
Benzoin	3	3

- (1) Kronos 2160
(2) Araldite PT-810 (Huntsman) / Tepic (Nissan Chemical)

Formulation Guidelines

DRY-blend paints A/B: 50/50

Application / Extrusion Conditions

Extruder:	BUSS PCS-30
Torque:	40%
Speed:	200 rpm
Extrusion temperature:	80°C
Spraying Gun:	GEMA PG 1-B
Application voltage:	60-80 Kv
Test substrate:	Degreased steel 1 mm
Curing conditions:	15min. at 200°C

Coating Properties

Film thickness	60-80 microns
Gloss 60°, (ASTM D-523-60E)	Ca 30%
Cupping test, (DIN 53156)	Over 8 mm
Direct Impact, (ASTM D-2794)	Over 80 Kg.cm
Reverse Impact, (ASTM D-2794)	Over 80 Kg.cm
Conical mandrel, (ASTM D-522)	100%
Adhesion, (DIN 53151)	Gt0

Product Safety

Please refer to the corresponding Safety Data Sheet.

Delivery form

Granules. White opaque polyethylene bags of 25 Kg. One Ton pallet shrink – wrapped.

Storage & Handling

The resin in its original unopened bags is stable for more than three years, stored in a dry place at temperature below 30°C. Avoid direct sunlight.

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, ARKEMA expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Arkema has implemented a Medical Policy regarding the use of Arkema products in medical devices applications that are in contact with the body or circulating bodily fluids (<http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html>) Arkema has designated medical grades to be used for such medical device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in medical device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in medical device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not to be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices, and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.

It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies). It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the component authority, and the treating physician.

Headquarter**ARKEMA FRANCE**

420 rue d'Estienne d'Orves
92705 Colombes Cedex – France
Tel : +33 (0)1 49 00 80 80

Arkema.com - arkemacoatingresins.com

ARKEMA QUÍMICA, S.A.U.

CTRA. OLZINELLES, S/N
E08470 SANT CELONI (BCN) – ESPAÑA
Tel: + 34 93 867 40 00

The logo for ARKEMA, featuring the word "ARKEMA" in a bold, sans-serif font. The letters "A", "R", "K", "E", and "M" are in a dark blue color, while the letter "A" at the end is in a light green color.