



TECHNICAL DATA SHEET

UREFREE 4704 IM

Saturated Carboxylated Polyester Resin

SYNTHESE (THAILAND) CO.,LTD.
CHARN ISSARA TOWER II, 16th Floor,
2922/228-229 New Petchburi Road,
Huay Kwang, Bangkok 10310, Thailand
Tel : (66) 0-2308-7200
Fax : (66) 0-2308-7260

Technical Features :

- Excellent flow and high gloss.
- Good balance properties.
- Good outdoor durability .

Applications :

- Outdoor durable coatings
- Structural steel paints

Composition (Solids) :

TMA free

Product Specifications :

Item	Limits	Unit	Test method
Appearance	Pale granules	-	Visual
Acid value	30 - 36	mg.KOH/g.	ASTM D-1639
Brookfield Viscosity at 165 °C	300 - 500	Poises, P	ICI-DIN 53229
Colour (50% in DMF)	max. 3	Gardner	ASTM D-1544

Other Properties :

Item	Typical value	Unit	Test method
Glass transition temperature (T _g)	Approx. 63	°C	DSC

Form of Supply : Granules. White opaque polyethylene (PE) bags of 25 Kg. One ton pallet shrink - wrapped.

Storage Conditions : The resin should be stored in the original and unopened bags in a dry and well ventilated place at storage temperatures below 30 °C. Exposure to direct sunlight should be avoided. Do not stack more than two pallets high.

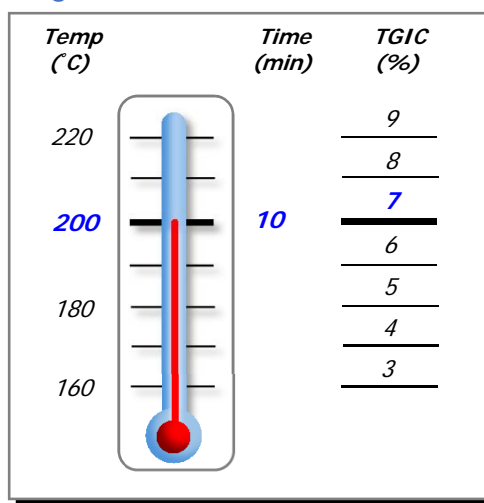
Shelf Life : Under the above mentioned storage conditions the shelf life of the resin is 1 (one) year ex works. For the resin that exceeds the shelf-life of 1 (one) year should be tested on acid value and viscosity prior to its use.

Curing Type :

TGIC

Ratio 93/7

Curing Information :





TECHNICAL DATA SHEET

UREFREE 4704 IM

Saturated Carboxylated Polyester Resin

SYNTHESE (THAILAND) CO.,LTD.
CHARN ISSARA TOWER II, 16th Floor,
2922/228-229 New Petchburi Road,
Huay Kwang, Bangkok 10310, Thailand
Tel : (66) 0-2308-7200
Fax : (66) 0-2308-7260

Starting Formulation :

■ Glossy, white powder coating

UREFREE 4704 IM	612
Triglycidyl isocyanurate ⁽¹⁾	46
Titanium dioxide, TiO ₂ ⁽²⁾	329
Flow control agent ⁽³⁾	10
Benzoin	3
Total weight	1000

(1) TEPIC-G (Nissan Chemical) / Araldite PT 810 (Huntsman)

(2) TIONA 696 (CRISTAL) / KRONOS 2160

(3) BYK-368 P (BYK-Chemie) / MODAFLOW RESIN (Allnex) /
Resiflow PV5 (Worlée) / Acronal 4 F (BASF)

Application Properties of Starting Formulation:

Film thickness	: 60 - 80 micron	ASTM D1400
Gloss at 60°	: Over 90%	ASTM D-523-60E
Conical mandrel	: 100%	ASTM D-522
Adhesion	: Gt = 0	DIN 53151
Direct impact	: Over 80 Kg.cm.	ASTM D-2794
Reverse impact	: Over 80 Kg.cm.	ASTM D-2794

Enquiries / Contact Details

Tel : +66 2308 7200 (Office)
Fax : +66 2308 7260 (Office)
E-mail : sales@synthese-thailand.com

Extrusion / Application Conditions :

■ Extrusion

Extruder	: Co-rotating twin-screw
Extrusion temperature	: 70 / 90 / 90 °C ⁽⁴⁾
Torque	: 80 - 90 %
Speed	: 200 rpm

■ Application

Spray gun / Voltage	: GEMA PG 1-C / 30 - 60 kV
Test substrate	: Degreased steel 0.8 mm.
Cure schedule	: 10 min @ 200 °C ⁽⁵⁾

(4) Barrel zone temperatures : 1st Zone / 2nd Zone / 3rd Zone

(5) Metal temperature

Health, Safety and Environmental :

Refer to the safety data sheet (SDS) for more information.

SDS and Test Methods :

Documentation is available on request.

This product is intended for sale to industrial and commercial customers. Product users must inspect and test before use, to satisfy themselves as to contents and suitability. Products are warranted to meet our written specifications. Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness. 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.