



## TECHNICAL DATA SHEET

### UREFREE 6489

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  
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#### Technical Features :

- Good flow.
- Good yellowing resistance.
- Good mechanical properties.

#### Applications :

- Material office furniture
- Construction
- Appliances

#### 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 <sub>g</sub> ) | Approx. 59    | °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.

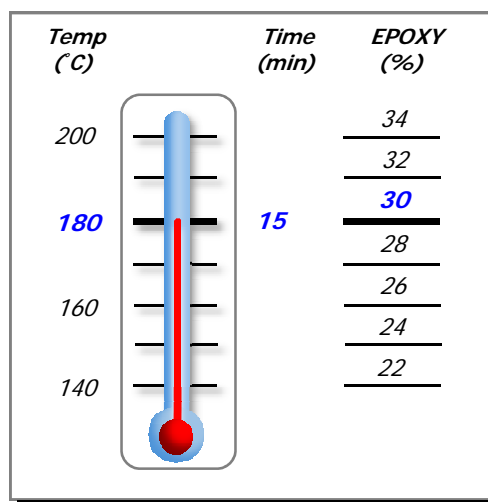
**Shelf Life** : Under the above mentioned storage conditions the shelf life of the resin is 1 (one) year ex works. For the resin that exceeds the shelf-life of 1 (one) year should be tested on acid value and viscosity prior to its use.

#### Curing Type :

**HYBRID**

**Ratio 70/30**

#### Curing Information :





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## Starting Formulation :

## ■ Glossy, white powder coating

|   |             |
|---|-------------|
| UREFREE 6489                                      | 460         |
| Epoxy resin <sup>(1)</sup>                        | 197         |
| Titanium dioxide, TiO <sub>2</sub> <sup>(2)</sup> | 330         |
| Flow control agent <sup>(3)</sup>                 | 10          |
| Benzoin   | 3           |
| <b>Total weight</b>                               | <b>1000</b> |

(1) Araldite GT-7004 (Huntsman) / D.E.R. 663U (Dow Chemical)

(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

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## Extrusion / Application Conditions :

## ■ Extrusion

|                       |                                  |
|-----------------------|----------------------------------|
| Extruder              | : Co-rotating twin-screw         |
| Extrusion temperature | : 70 / 90 / 90 °C <sup>(4)</sup> |
| 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       | : 15 min @ 180 °C <sup>(5)</sup> |

(4) Barrel zone temperatures : 1<sup>st</sup> Zone / 2<sup>nd</sup> Zone / 3<sup>rd</sup> 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.