



# Technical Data Sheet

Product Name  
**SCGC™ HDPE**

Product Type  
**Polyethylene for Rotational Moulding**

Product Grade  
**3985**

## Product Description

ICORENE® 3985 is a color compound high density polyethylene specifically developed for rotational moulding application which exhibits superior mechanical properties when compared to traditional high density grades.

This grade has been specifically developed for kayaks that require a balance of stiffness and toughness, fast cooking behavior and fully UV protection with a minimum UV8 rating.

## Typical Application

- Kayaks
- Pallets
- Underground tanks
- Inspection pits

## Product Characteristics

- Excellent stiffness
- Excellent impact strength
- Fast cycle time and excellent flow
- Excellent color fastness and UV protection (UV8) for outdoor use
- Wide variety of colors

## Physical Properties

| Properties  | Test Method | Typical Value | Unit              |
|---|-------------|---------------|-------------------|
| Melt Flow Rate @ 190°C, 2.16 kg                                   | ASTM D 1238 | 5.0           | g/10 min          |
| Density   | ASTM D 1505 | 0.950         | g/cm <sup>3</sup> |
| Melting Point   | ASTM D 2117 | 128 (262)     | °C (°F)           |
| Crystallization Point   | ASTM D 2117 | 117 (243)     | °C (°F)           |
| Heat Deflection Temperature @ 0.455 MPa                           | ASTM D 648  | 66 (150)      | °C (°F)           |
| Vicat Softening Temperature                                       | ASTM D 1525 | 120 (248)     | °C (°F)           |
| <b>Mechanical Properties</b>                                      |             |               |                   |
| Tensile Strength at Yield @ Speed 50 mm/min                       | ASTM D 638  | 22 (3200)     | MPa (psi)         |
| Tensile Strength at Break @ Speed 50 mm/min                       | ASTM D 638  | 28 (4060)     | MPa (psi)         |
| Elongation at Break @ Speed 50 mm/min                             | ASTM D 638  | 1160          | %                 |
| Flexural Modulus  | ASTM D 790  | 910 (132000)  | MPa (psi)         |
| Surface Hardness  | ASTM D 2240 | 62            | Shore D           |
| ARM Impact Strength @ -40°C (5.5 mm rotomolded sample) ARM Method |             | 28 (114)      | J/mm (lb-ft)      |

**Note:** • The given values are typical value measured on the product. Values herein are not to be constructed as a product specification.

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|   |                                   |
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## Processing Guidelines

Moulding cycles depend on mould materials and its wall thickness, oven temperature, and shot size. Typical oven temperatures should be set between 250 and 300°C. The recommended PIAT for 3985 is about 200°C which may vary with a color shade.

### Points of Concerns

- It is not recommended to flame the surfaces of molded parts with an open torch due to risk of thermal degradation and premature failure.
- Inclusion of fillers or recycled materials into the resins either by compounding or dry blending is not recommended due to risk of compromised impact strength.
- Use of pigments above 0.3% by dry blending into natural powder should be avoided due to risks of lower impact strength.
- Additional antioxidants, internal lubricants, or UV stabilizers into the virgin resins during the compounding process should be considered depending on the end applications.
- For black compound, use up the powder as quickly as possible after the package is opened due to a high moisture pick-up that will result to pinholing and poor impact strength.
- The discoloration to the products may be occurred, irrespective of period of time, due to external factors such as gas fading, staining, sublimation, migration, contamination with packaging or chemicals in contact, either directly or indirectly.
- Customer shall be responsible for testing, verification, and approval of final products for fit-for-use in terms of the customer's own use and end user's use both functions and appearance before make warranties of merchantability.

### Product Technical Assistance

For technical assistance or further information on this product or any other SCG Chemicals' products, contact your SCG Chemicals technical services at the address as specified below.

## Product Available Form

- Color compound powder
- Black compound powder

## Product Packaging

- 25 kg loose bag
- 25 kg stretch wrap palletized

## Storage

- Store in original container in tidy according to the manual of Handling and Storage from Thai Polyethylene Co., Ltd.
- Product(s) should be stored in dry and dust free location at temperature below 50 °C and protected from direct sunlight and/or heat, well-ventilated area, away from incompatible materials and food and drink, as this may lead to quality deterioration, which results in odour generation and colour changes and can have negative effects on the physical properties of this product.
- Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
- The storage area should be stable and not be sloped.

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