Technical Data Sheet

Product Name
SCGC™ LLDPE

Product Type
Polyethylene for Rotational Moulding

Product Grade
M3804RW

Product Description

SCGC M3804RW is a linear-low density polyethylene (LLDPE) for rotational moulding applications. M3804RW is a natural color PE resin available in a pellet form. These grades are suitable for rotational moulding of storage tanks and general purpose applications.

Typical Application

- Water storage tanks
- Small to medium tanks (<5,000 L)[1]
- Material handling equipment
- Intermediate bulk containers (IBC)

Product Characteristics

- High stiffness
- Good impact strength
- Fast cooking
- UV-stabilized (UV8) for outdoor use

International Compliance

- Meet the requirements of U.S. Food and Drug Administration (FDA) 21 CFR Part 177.1520 Olefin polymers (c) 2.1 for food contact under conditions of use D-G (21 CFR 176.170(c) Table 2)

Physical Properties

Properties	Test Method	Typical Value	Unit
Melt Flow Rate @ 190°C, 2.16 kg	ASTM D 1238	4.0	g/10 min
Density	ASTM D 1505	0.938	g/cm³
Melting Point	ASTM D 2117	125 (257)	°C (°F)
Crystallization Point	ASTM D 2117	113 (236)	°C (°F)
Heat Deflection Temperature @ 0.455 MPa	ASTM D 648	65 (149)	°C
Vicat Softening Temperature	ASTM D 1525	116 (241)	°C (°F)
Mechanical Properties			
Tensile Strength at Yield @ Speed 50 mm/min	ASTM D 638	20 (2900)	MPa (psi)
Tensile Strength at Break @ Speed 50 mm/min	ASTM D 638	18 (2600)	MPa (psi)
Elongation at Break @ Speed 50 mm/min	ASTM D 638	800	%
Flexural Modulus	ASTM D 790	700 (102000)	MPa (psi)
Surface Hardness	ASTM D 2240	60	Shore D
ARM Impact Strength @ -40°C (5.5 mm rotomolded sample)	ARM Method	27 (110)	J/mm (lb-ft)
Brittleness Temperature	ASTM D 746	< -60 (-76)	°C (°F)

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

[1]Depending of tank thickness which is designed by height, diameter and specific gravity of fluid.

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Manufacturer website: https://www.scgchemicals.com/en

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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 M3804RW is about 220°C.

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

- Natural pellet

Product Packaging

- 25 kg loose bag
- 25 kg stretch wrap palletized
- 750 kg big bag

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 slopped.

Safety

- The product is not classified as a hazardous material.
- Please see our Material Safety Data Sheet for details on various aspects of safety, recovery, and disposal of the products; for more information, contact your SCG Chemicals technical services.

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Recycling

- The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.
- Please see our Material Safety Datasheet for details on various aspects of safety, recovery and disposal of the products; for more information, contact your SCG Chemicals technical services.

Related Documents

- The latest version of this document will be available at our website, www.scgchemicals.com, or can be obtained from the SCG Chemicals technical services.
- The following related documents are available on request, and represent various aspects on the usability, safety, recovery and disposal of the product.
  - Safety Data Sheet
  - Declaration of Compliance

Disclaimer

- The Applications specified herein is for reference only.
- It is customer's responsibilities to inspect and test the product for suitability of the customer's own use and purpose. The customer is responsible for appropriate, safe, legal use, processing and handling of the product.
- To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication. We however do not assume any liability whatsoever for the accuracy and completeness of the information contained herein.
- We make no warranties which extend beyond the description herein. Nothing herein shall constitute any implied warranty of merchantability or fitness for a particular purpose.
- No liability can be accepted in respect of the use of the product in conjunction with other materials. The information contained herein relates exclusively to the product when it is not used in conjunction with any third party's materials.

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