Technical Datasheet | Polyethylene for Rotational Molding

EL-Lene™

M3504DXP/M50

Product Description

M3504DXP and M50 are powder and color compound of Dowlex NG2429.01G which is a linear-low density polyethylene octene copolymer for rotational molding applications. M3504DXP and M50 are specifically designed for applications requiring excellent environmental stress crack resistance and impact strength combined with low warpage and good processing. It is fully heat and UV stabilized resulting in a wide processing latitude, good color retention, and long life expectancy. Both of them are recommended for large and thick tanks with a generous radius and curve.

Typical Applications

- Intermediate bulk containers
- Drums for chemicals
- Boats
- Freezer containers
- Large and thick tanks with a radius and curve

Product Characteristics

- Excellent ESCR
- Excellent chemical resistance
- High impact strength
- Enhanced outdoor performance with proven UV-protection recipe
- Meet the requirements of U.S.21 CFR F.D.A. regulation Part 177.1520 clauses (C) for food contact use

Physical Properties

Properties	Test Method	Value*	Unit
Resin Properties			
Melt Index	ISO 1133	4.0	g/10 min
Density	ISO 1183	0.935	g/cm^3
Melting Point	DSC	125 (257)	°C (°F)
Crystallization Point	DSC	105 (221)	°C (°F)
Vicat Softening Point	ISO 306/A120	118 (244)	°C (°F)
Heat Distortion Temperature, 0.455 MPa	ISO 75	60 (140)	°C (°F)
Heat Distortion Temperature, 1.82 MPa	ISO 75	41 (106)	°C (°F)
Mechanical Properties			
Tensile Strength at Yield	ISO 527-2	17 (2460)	MPa (psi)
Tensile Strength at Break	ISO 527-2	25 (3600)	MPa (psi)
Elongation at Break	ISO 527-2	800	%
Flexural Modulus, 1% Secant	ISO 178	640 (92800)	MPa (psi)
Surface Hardness	ISO 868	57	Shore D
ARM Impact Strength @ -40 °C	ARM Method (5.5 mm rotomolded sample)	25 (101)	J/mm (lb-ft)
ESCR (100% Antarox)	ASTM D 1693	>1,000	hrs, F_{50}

*Value quoted are the result of tests on representative samples, and product supplied in all respects.

Processing Guidelines

Molding cycles depend on mold 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 M3504DXP is about 235 °C, whereas the PIAT of M50 color compound varies depending on color shade. M3504DXP and M50 require 10% longer cooking time than normal butene grades.

Point of Concern

Finishing rotational parts by flaming, using scrap/filler in compound formulation, or dryblending pigment > 0.3% can decrease mechanical properties of rotational parts, which is not recommended.

Product Technical Assistance

For technical assistance or further information including other applications or any other products and chemical resistance guide, please contact Technical service engineer.

Product Available Form

- **M3504DXP = Natural powder with high UV resistance (UV8)**
- **M50 = Color compound powder with high UV resistance (UV8)**

Product Packaging

- 25 kg loose bag
- 25 kg bag on pallet

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Storage

- Store in original container in tidy according to the manual of Handling and Storage from Thai Polyethylene Company Limited.
- 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.

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