

Product Description

M3204RU is a linear-low density polyethylene (LLDPE) for indoor/ semi-indoor rotational molding applications. M3204RU is a natural color PE resin available in a pellet and powder form. This grade is suitable for containers and general applications which are indoor/ semi-indoor or for thin wall (less than 5 mm) parts.

Typical Applications

- Fishery/cooler containers
- Portable containers
- Material handling containers
- General purpose molding
- Chemical storage tanks

Product Characteristics

- High impact strength
- Low shrinkage and warpage
- Consistent dimension
- Meet the requirements of U.S.21 CFR F.D.A. regulation Part 177.1520 clauses (C) for food contact use
- Meet Thai Industrial Standard TIS 816-2556

Physical Properties

Properties	Test Method	Value*	Unit
Resin Properties			
Melt Index	ASTM D 1238 @ 190 °C, 2.16 kg	4.0	g/10 min
Density	ASTM D 1505	0.932	g/cm ³
Melting Point	ASTM D 2117	125 (257)	°C (°F)
Crystallization Point	ASTM D 2117	110 (230)	°C (°F)
Heat Deflection Temperature, 0.455 MPa	ASTM D 648	58 (136)	°C (°F)
Vicat Softening Temperature	ASTM D 1525	108 (226)	°C (°F)
Mechanical Properties			
Tensile Strength-at-Yield	ASTM D 638 @ Crosshead speed 50 mm/min	17 (2500)	MPa (psi)
Tensile Strength-at-Break	ASTM D 638 @ Crosshead speed 50 mm/min	25 (3600)	MPa (psi)
Elongation-at-Break	ASTM D 638 @ Crosshead speed 50 mm/min	1000	%
Flexural Modulus	ASTM D 790	570 (82700)	MPa (psi)
Surface Hardness	ASTM D 2240	55	Shore D
ARM Impact Strength @ -40 °C	ARM Method (5.5 mm rotomolded sample)	28 (114)	J/mm (lb-ft)
Brittleness Temperature	ASTM D 746	<-60 (-76)	°C (°F)

*Value quoted are the result of tests on representative natural 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 M3204RU/RUP is about 180 °C; however, the PIAT of M30, M31, and M40 color compound varies depending on color shade.

Points of Concerns

- 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.
- M3204RU/RUP is not recommended for extrusion into color compound. If used, must add additional antioxidants during extrusion process.
- M3204RU/RUP is not recommended for parts which exceed 5 mm or 30 min heating.
- M3204RU/RUP is not recommended for products used under direct and intense sunlight.

Product Technical Assistance

For technical assistance or further information including other applications, and a chemical list for chemical tanks on this grade or any other products, please contact Technical service engineer.

Product Available Form

- M3204RU = Natural pellet with low level of antioxidants and UV stabilizers (UV3)
- M3204RUP = Natural powder (35 mesh) with low level of antioxidants and UV stabilizers (UV3)

** Remark : The natural pellet and powder are slightly yellowish in appearance after molded; therefore, it is recommended to be used as colored parts.

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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