**Polymer Add (Thailand) Co.,Ltd.**

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# MICRONISED LLDPE RESIN

# STRUCTURAL ROTOMOULDED PRODUCTS

## 1) Identification & Chemical Information

| Item | Details |
|---|---|
| Polymer Type | Linear Low-Density Polyethylene (LLDPE) |
| Resin Form | Micronised powder (rotational moulding grade) |
| Typical Melt Flow Rate (MFR) | ~6 g/10 min (190 °C / 2.16 kg) |
| Common Industry / Trade Synonyms | Rotomoulding LLDPE powder; Medium-flow LLDPE rotograde |

## 2) Physical and Chemical Properties

| Property | Description |
|---|---|
| Appearance | White to natural fine powder |
| Density | ~0.935–0.940 g/cm$^3$ |
| Melting Range | ~120–125 °C |
| Solubility | Insoluble in water |
| **Particle Size Distribution (Micronised Grade)** | D50: ~80–150 µm<br>D90: <250 µm<br>D99: <300 µm |

## 3) Application-Specific Technical Discussion

### 3.1 Specific Benefits

Micronised LLDPE resin with MFR ≈ 6 is selected for structural rotomolded products where balanced flow, uniform sintering, and long-term mechanical stability are required across thick- and thin-wall sections.

- Uniform sintering during rotational moulding cycles
- Balanced melt flow for complex mould geometries
- Good impact strength retention in thick sections
- Stable mechanical performance after long heating cycles

### 3.2 End Uses

- Water storage and chemical tanks
- Automotive fuel tanks and air ducts
- Industrial bins, containers, and pallets
- Outdoor furniture and playground equipment

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- Agricultural tanks and troughs
- Septic tanks and infrastructure components
- Rotomoulded housings and enclosures

### 3.3 Key Physical, Chemical & Performance Parameters

- Medium melt flow rate suitable for rotomoulding sintering behaviour
- Linear polymer structure providing balanced toughness and stiffness
- Thermal stability under extended heating cycles
- Resistance to environmental stress cracking
- Micronised powder morphology supporting uniform mould coating

### 3.4 Known Limitations

- Not optimised for very thin-wall cosmetic mouldings
- Requires UV stabilisation for long-term outdoor exposure
- Impact performance dependent on moulding cycle control

## 4) Regulatory Note

*Regulatory status depends on grade, purity, and intended use. Food-contact and regional compliance listings, where applicable, are addressed in separate regulatory documentation.*

## 5) Disclaimer

Information provided for technical reference only.
No warranty of fitness for a particular purpose.
User responsible for validation, trials, and regulatory compliance.

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**END OF ARTICLE**