



# CERTENE™ HI-864U

Muehlstein - High Density Polyethylene

Monday, June 9, 2025

## General Information

### Product Description

HI-864U is a certified prime grade UV STABILIZED resin designed for INJECTION MOLDING of large sized industrial applications requiring superior Toughness and high Stiffness. HI-864U features very narrow molecular weight distribution, easy processability, good Impact strength, very high Rigidity, excellent dimensional stability, and high Warpage resistance. HI-864U suggested applications include bottle and fish crates, fruit and vegetable trays, industrial pails, sport articles, cases, tote bins, and structural foam. HI-864U processing temperature is 220° to 250°C with mold at 20° to 40°C. HI-864U complies with FDA regulation 21CFR 177.1520 (c) 3.1(a) + 3.2(a) and with most international regulations concerning the use of Polyethylene in contact with food articles.

### General

|                   |                                                                                                                |                                                                                                   |                                    |
|-------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------|
| Material Status   | • Commercial: Active                                                                                           |                                                                                                   |                                    |
| Availability      | • Latin America                                                                                                | • North America                                                                                   |                                    |
| Additive          | • UV Stabilizer                                                                                                |                                                                                                   |                                    |
| Features          | • Food Contact Acceptable<br>• Good Dimensional Stability<br>• Good Impact Resistance<br>• Good Processability | • Good Toughness<br>• High Rigidity<br>• High Stiffness<br>• Narrow Molecular Weight Distribution | • UV Resistant<br>• Warp Resistant |
| Uses              | • Bottles<br>• Crates<br>• Food Service Applications                                                           | • Industrial Applications<br>• Pails<br>• Sporting Goods                                          | • Structural Foam                  |
| Agency Ratings    | • FDA 21 CFR 177.1520(c) 3.1a • FDA 21 CFR 177.1520(c) 3.2a                                                    |                                                                                                   |                                    |
| Forms             | • Pellets                                                                                                      |                                                                                                   |                                    |
| Processing Method | • Injection Molding                                                                                            |                                                                                                   |                                    |

## ASTM & ISO Properties <sup>1</sup>

| Physical                                                                                        | Nominal Value | Unit              | Test Method |
|-------------------------------------------------------------------------------------------------|---------------|-------------------|-------------|
| Density / Specific Gravity                                                                      | 0.964         | g/cm <sup>3</sup> | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)                                                       | 8.0           | g/10 min          | ASTM D1238  |
| Environmental Stress-Cracking Resistance (ESCR) <sup>2</sup><br>50°C, 1.75 mm, 100% Igepal, F50 | 3.00          | hr                | ASTM D1693  |
| Mechanical                                                                                      | Nominal Value | Unit              | Test Method |
| Tensile Strength <sup>3</sup> (Yield)                                                           | 33.0          | MPa               | ASTM D638   |
| Tensile Strength <sup>3</sup> (Break)                                                           | 15.0          | MPa               | ASTM D638   |
| Tensile Elongation <sup>3</sup> (Yield)                                                         | 7.0           | %                 | ASTM D638   |
| Tensile Elongation <sup>3</sup> (Break)                                                         | 100           | %                 | ASTM D638   |
| Flexural Modulus - 1% Secant <sup>4</sup>                                                       | 1700          | MPa               | ASTM D790   |
| Impact                                                                                          | Nominal Value | Unit              | Test Method |
| Notched Izod Impact (23°C)                                                                      | 87            | J/m               | ASTM D256   |
| Thermal                                                                                         | Nominal Value | Unit              | Test Method |
| Deflection Temperature Under Load<br>0.45 MPa, Unannealed                                       | 78.0          | °C                | ASTM D648   |
| Vicat Softening Temperature                                                                     | 131           | °C                | ASTM D1525  |

### Additional Information

Test made on compression molded plaque according to ASTM D 1928 Procedure C.

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#### Processing Information

| Injection              | Nominal Value | Unit |
|------------------------|---------------|------|
| Processing (Melt) Temp | 220 to 250    | °C   |
| Mold Temperature       | 20 to 40      | °C   |

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Notched Bent Strip

<sup>3</sup> 50 mm/min

<sup>4</sup> 1.3 mm/min