ExxonMobil Chemical

# ExxonMobil

## High Density Polyethylene

## HD-9856B Blow Molding Resin

## Description

HD-9856B is a HDPE blow molding resin designed for high performance packaging applications. Containers made from HD9856B exhibit a unique combination of stiffness and environmental stress cracking resistance. These properties, coupled with excellent processability on both continuous and intermittent equipment, afford significant lightweighting and/or fast-cycling potential in many applications. HD-9856B does not contain any antistat.

## Applications

- Household and industrial chemical containers
- Food packaging
- Pharmaceutical packaging

| Additive Package | Antistat | Thermal Stabilizer |
|---|---|---|
| | No | Yes |

| Resin Properties | Test Based on | Units SI (English) | Typical Values[1] |
|---|---|---|---|
| Melt Index, 190/2.16 | ASTM D-1238 | g/10 min | 0.46 |
| Density | ASTM D-4883 | g/cm$^3$ (lbs/ft$^3$) | 0.957 (59.8) |
| **Molded Properties**[2] | | | |
| **Mechanical** (23°C, 50% relative humidity, unless otherwise noted) | | | |
| Tensile Strength at Yield | ASTM D-638 | MPa (psi) | 30 (4,400) |
| Tensile Strength at Break | ASTM D-638 | MPa (psi) | 24 (3,500) |
| Elongation at Yield | ASTM D-638 | % | 7.5 |
| Elongation at Break | ASTM D-638 | % | 1100 |
| Flexural Modulus[3] | ASTM D-790 | MPa (psi) | 1,450 (215,000) |
| Tensile Impact | ASTM D-1822 | joules/cm$^2$ (ft lbs/in$^2$) | 26 (125) |
| Impact Brittleness Temperature | ASTM D-746 | °C (°F) | <-76(<-105) |
| Environmental Stress Crack Resistance[4] | ASTM D-1693 | hrs | >1000 |
| **Processing** | | | |
| Bulk Density | | kg/m$^3$ (lbs/ft$^3$) | 585 (36.5) |

1. Values are typical and should not be interpreted as specifications. Values may change with future development.
2. All molded properties were measured on compression molded plaques.
3. Method 1, Procedure A (1"x3"x0.125"), Tangent calculation.
4. Condition B, 100% Igepal.
5. HD9856B has NSF and UL recognition. Contact your ExxonMobil Chemical representative for details.

All high density polyethylene polymer grades can - in principle - be used in food contact applications in the USA (FDA). Migration or use limitations may apply. Please contact your ExxonMobil Chemical representative for more detailed information and/or actual compliance certification documents for the specific grade of interest.

**FDA Status:**

This resin meets all the requirements of the FDA for olefin polymers to be used as articles or components of articles for contact with food as set forth in 21 CFR 177.1520 (c) 3.1 and 3.2a.

# HD-9856B Blow Molding Resin

HD9856B is a Broad Molecular Weight bi-modal HDPE blow molding resin designed for high performance packaging applications. The superior environmental stress cracking resistance (ESCR) attribute of this resin combined with excellent processability on both continuous and intermittent equipment, affords significant potential for:

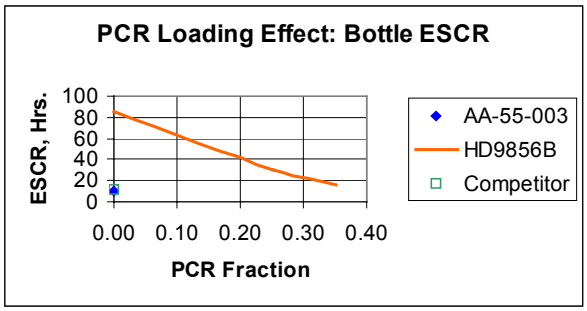
- Higher levels of PCR incorporation
- Lightweighting
- Improved ESCR performance

HD9856B provides an alternative for packaging applications where improved ESCR is desired or maintaining container performance with PCR incorporation is a requirement.

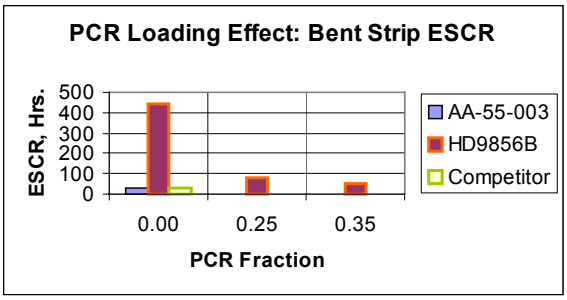
**Applications**

- Household and Industrial chemical containers
- Food packaging
- Pharmaceutical packaging

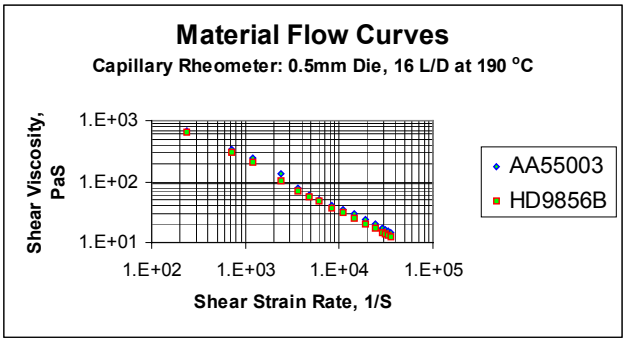
***Increased Environmental Stress Crack Resistance...***

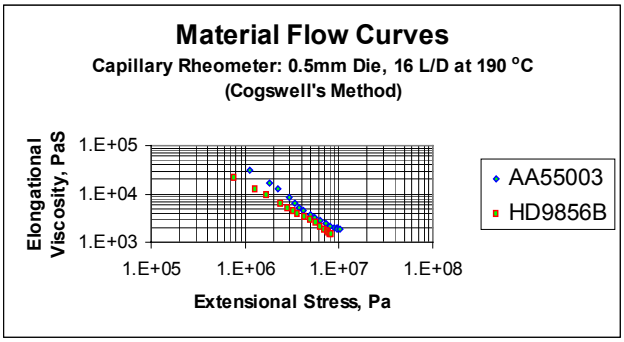



***Higher PCR Incorporation Potential...***




***At Equivalent Processability...***




**Following table lists other physical properties with PCR incorporation**

| Property | ASTM Method | AA55-003 | HD-9856B | HD-9856B 25% PCR | HD-9856B 35% PCR |
|---|---|---|---|---|---|
| MI-2, g/10 min | D-1238-95 | 0.3 | 0.46 | 0.50 | 0.55 |
| Tensile Modulus, PSI | D-638-89 | 220,000 | 325,000 | 291081 | 279839 |
| Tensile at Yield, PSI | D-638-95 | 4000 | 4400 | 4405 | 4254 |
| Tensile at Break, PSI | D-638-95 | 2100 | 3500 | 1398 | 1043 |
| Elongation at Yield, % | D-638-89 | 9 | 7.5 | 5.7 | 5.5 |
| Elongation at Break, % | D-638-95 | 400 | 1100 | 248 | 178 |