

## TECHNICAL DATASHEET

# HDPE QB453

### PRODUCT DESCRIPTION

**QB453** is a high-density copolymer with a narrow molecular weight distribution. This resin provides high impact strength and stress crack resistance, excellent colour, low odor and good processability. Typical applications include open head pails, large shipping containers and 55-gallon drum lids.

| TYPICAL PROPERTIES                                                               | ENGLISH  |          | SI       |          | TEST METHOD     |
|----------------------------------------------------------------------------------|----------|----------|----------|----------|-----------------|
|                                                                                  | UNIT     | VALUE    | UNIT     | VALUE    |                 |
| Physical                                                                         |          |          |          |          |                 |
| Melt Flow Rate, (190 °C/2.16 kg)                                                 | g/10 min | 4.5      | g/10 min | 4.5      | ASTM D1238      |
| Density (23 °C)                                                                  | g/cm³    | 0.953    | g/cm³    | 0.953    | ASTM D1505      |
| Bulk Density                                                                     | lb/ft³   | 37-39    | kg/m³    | 593-625  | ASTM D1895      |
| Spiral Flow                                                                      | in       | 7.8      | cm       | 19.8     | Producer Method |
| Mechanical                                                                       |          |          |          |          |                 |
| Flexural Modulus, (1% Secant)                                                    | psi      | 173000   | MPa      | 1190     | ASTM D790       |
| Flexural Modulus, (2% Secant)                                                    | psi      | 142000   | MPa      | 979      | ASTM D790       |
| Flexural Young's Modulus                                                         | psi      | 187000   | MPa      | 1290     | ASTM D790       |
| Tensile Modulus, (1% Secant)                                                     | psi      | 106000   | MPa      | 730      | ASTM D638       |
| Tensile Young's Modulus                                                          | psi      | 130000   | MPa      | 896      | ASTM D638       |
| Tensile Stress at Break, (23 °C)                                                 | psi      | 4000     | MPa      | 27.6     | ASTM D638       |
| Tensile Stress at Yield, (23 °C)                                                 | psi      | 4000     | MPa      | 27.6     | ASTM D638       |
| Tensile Elongation at Break, (23 °C)                                             | %        | 1700     | %        | 1700     | ASTM D638       |
| Tensile Elongation at Yield, (23 °C)                                             | %        | 11       | %        | 11       | ASTM D638       |
| Environmental Stress Crack Resistance, F <sub>50</sub><br>(100% Igepal®, Cond B) | hr       | 9        | hr       | 9        | ASTM D1693      |
| Impact                                                                           |          |          |          |          |                 |
| Notched Izod Impact Strength, (23 °C)                                            | ft-lb/in | 1.2      | J/m      | 64       | ASTM D256       |
| Unnotched Impact Strength, (-18 °C)                                              |          | No break |          | No break | ASTM D4812      |
| Hardness                                                                         |          |          |          |          |                 |
| Shore Hardness, (Shore D, max)                                                   |          | 71       |          | 71       | ASTM D2240      |
| Thermal                                                                          |          |          |          |          |                 |
| Vicat Softening Temperature                                                      | °F       | 262      | °C       | 128      | ASTM D1525      |
| Low Temperature Brittleness, F <sub>50</sub>                                     | °F       | <-105    | °C       | <-76     | ASTM D746       |
| Deflection Temperature Under Load, (66 psi, Unannealed)                          | °F       | 164      | °C       | 73.1     | ASTM D648       |
| Melting Temperature                                                              | °F       | 268.2    | °C       | 131.2    | ASTM D3418      |
| Crystallization Temperature                                                      | °F       | 241.0    | °C       | 116.1    | ASTM D3418      |

HIGH DENSITY  
POLYETHYLENE  
QB453

# Qualitene<sup>TM</sup>

ENABLING A SUSTAINABLE FUTURE

Notes: Conditions of Tensile Stress and Elongation values are: 50 mm/min, Type IV specimen.

Conditions of Flexural Modulus values are: 0.5 inches/min or 12.5 mm/min.

Conditions of Tensile Modulus values are: 50 mm/min, Type I Specimen.

Spiral Flow measures the number of inches of flow produced when molten resin is injected into a long, spiral channel (0.0625" insert), at a constant injection pressure of 1000 psi with a melt temperature of 440 °F.

Deflection Temperature Under Load and Low Temperature Brittleness data are for control and development work and are not intended for use in design or predicting performance at elevated or sub-ambient temperatures.

These are typical property values not to be construed as specification limits.

## APPLICATION:

Containers; Pails

## PROCESSING METHOD:

Injection Moulding

## PROCESSING TECHNIQUES:

Specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

# HDPPE

HIGH DENSITY  
POLYETHYLENE  
QB453