

# SABIC® HDPE M1053

## HIGH DENSITY POLYETHYLENE

### DESCRIPTION

SABIC® HDPE M1053 is an easy-to-process, tough grade with good resistance to environmental stress cracking (ESCR) and low notch sensitivity. SABIC® HDPE M1053 is typically used for e.g. caps, closures and pails. This product is not intended for and must not be used in any pharmaceutical/medical applications.

### TYPICAL PROPERTY VALUES

Revision 20170531

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>POLYMER PROPERTIES</b>			
<b>Melt Flow Rate</b>			
at 190 °C and 2.16 kg	10	dg/min	ISO 1133
at 190 °C and 5 kg	28	dg/min	ISO 1133
<b>Density</b> (1) (2) (3) (4)	953	kg/m <sup>3</sup>	ISO 1183
<b>MECHANICAL PROPERTIES</b> (1) (2) (3) (8) (9) (4)			
<b>Tensile test</b> (5) (6)			
stress at yield	26	MPa	ISO 527-2
stress at break	16	MPa	ISO 527-2
strain at break	200	%	ISO 527-2
tensile modulus	1100	MPa	ISO 527-2
<b>Flexural test</b>			
Flexural modulus	1200	MPa	ISO 178
Flexural strength	26	MPa	ISO 178
<b>Izod impact notched</b>			
at 23 °C	3	kJ/m <sup>2</sup>	ISO 180/A
<b>Hardness Shore D</b>	61	-	ISO 868
<b>ESCR on Caps</b> (7)	25	h	SABIC method
<b>THERMAL PROPERTIES</b>			
<b>Heat deflection temperature</b> (3) (8) (9) (4)			
at 0.45 MPa (HDT/B)	81	°C	ISO 75-2
<b>Vicat Softening Temperature</b> (3) (8) (9) (4)			
at 10 N (VST/A)	124	°C	ISO 306
<b>DSC test</b>			
melting point	132	°C	ISO 11357-3
enthalpy change	203	J/g	ISO 11357-3

- (1) Compression moulding of test specimen according to ISO 1872-2
- (2) Compression moulding of test specimen according to ISO 1872-2
- (3) Compression moulding of test specimen according to ISO 1872-2
- (4) Compression moulding of test specimen according to ISO 1872-2
- (5) Speed of testing: 50 mm/min
- (6) Test specimen according to ISO 527-2 type 1BA, thickness 2 mm
- (7) Determined in 10% Igepal CO-630 at 40 °C, 6 bar internal water pressure, thickness 1 mm
- (8) Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours
- (9) Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours

## STORAGE AND HANDLING

Polyethylenes resins (in pelletised or powder form) should be stored in such a way that it prevents exposure to direct sunlight and/or heat, as this may lead to quality deterioration. The storage location should also be dry, dust free and the ambient temperature should not exceed 50 °C. Not complying with these precautionary measures can lead to a degradation of the product which can result in colour changes, bad smell and inadequate product performance. It is also advisable to process polyethylene resins (in pelletised or powder form) within 6 months after delivery, this because also excessive aging of polyethylene can lead to a deterioration in quality.

## ENVIRONMENT AND RECYCLING

The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC Europe considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC Europe whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

## QUALITY

SABIC Europe is fully certified in accordance with the internationally accepted quality standard ISO 9001.

## HEALTH, SAFETY AND FOOD CONTACT REGULATIONS

Detailed information is provided in the relevant Material Safety Datasheet and or Standard Food Declaration, available on the Internet ([www.SABIC-europe.com](http://www.SABIC-europe.com)). Additional specific information can be requested via your local Sales Office.

## DISCLAIMER

The information contained herein may include typical properties of our products or their typical performances when used in certain typical applications. Actual properties of our products, in particular when used in conjunction with any third party material(s) or for any non-typical applications, may differ from typical properties.

It is the customer's responsibility to inspect and test our product(s) in order to satisfy itself as to the suitability of the product(s) for its and its customers particular purposes. The customer is responsible for the appropriate, safe and legal use, processing and handling of all product(s) purchased from us.

Nothing herein is intended to be nor shall it constitute a warranty whatsoever, in particular, warranty of merchantability or fitness for a particular purpose.

SABIC as referred to herein means any legal entity belonging to the group of companies headed by Saudi Arabia Basic Industries Corporation.