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 20191018

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
POLYMER PROPERTIES			
Melt Flow Rate (MFR)			
at 190 °C and 2.16 kg	10	dg/min	ISO 1133
at 190 °C and 5 kg	28	dg/min	ISO 1133
Density [1]	953	kg/m³	ISO 1183
MECHANICAL PROPERTIES [1] [2]			
Tensile test [3] [4]			
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
Flexural test			
Flexural modulus	1200	MPa	ISO 178
Flexural strength	26	MPa	ISO 178
Izod impact notched			
at 23 °C	3	kJ/m²	ISO 180/A
Hardness Shore D	61	-	ISO 868
ESCR on Caps [5]	25	h	SABIC method
THERMAL PROPERTIES			
Heat deflection temperature [1] [2]			
at 0.45 MPa (HDT/B)	81	°C	ISO 75-2
Vicat Softening Temperature [1] [2]			
at 10 N (VST/A)	124	°C	ISO 306
DSC test			
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) Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours
(3) Test specimen according to ISO 527-2 type 1BA, thickness 2 mm
(4) Speed of testing: 50 mm/min
(5) Determined in 10% Igepal CO-630 at 40 °C, 6 bar internal water pressure, thickness 1 mm

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 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 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.

DISCLAIMER