

## Product Data Sheet

**HEX4460 Pe80+**  
**High Density Polyethylene**

### Product Description

HEX4460 PE80+ is a high molecular weight, high density polyethylene (HDPE) with high melt viscosity for extrusion.

This grade, which is produced by 1-hexene co-monomer, is classified as PE 80+ and provides excellent stress crack resistance properties (ESCR) combined with very good long-term hydrostatic strength and good processability.

Typical customer applications are underfloor heating and multilayer pipe for heating and plumbing. HEX4460 Pe80+ has been manufactured under Basell license.

### General Information

**Status** : Commercial: Active

**Application** : Drinking water pipe, drainage pipe, plumbing, heating & cooling

**Form(s)** : Pellet

**Attribute:** Outstanding ESCR

Good Resistance to SCG & RCP

Good Creep Strength Good Processability

Good Chemical Resistance Very Good Low Temp. Impact Resistance

**Additives:** Processing Aid: No  
Antiblock: No

Antioxidant: Yes  
Slip Agent: No

Typical Properties	Typical Value	Unit	Test Method
<b>Physical</b>			
High Load Melt Flow Index (190°C/ 21.6 kg)	6.0	g/10 min	ISO 1133
Melt Flow Index (190°C/ 5.0 kg)	0.33	g/10 min	ISO 1133
Density	0.944	g/cm <sup>3</sup>	ISO 1183
<b>Mechanical</b>			
Tensile Strength at Yield	25	Mpa	ISO 527-1, -2
Elongation at Yield	11	%	ISO 527-1, -2
Elongation at Break	> 1000	%	ISO 527-1, -2
Tensile Strength at Break	40	Mpa	ISO 527-1, -2
Tensile Modulus of Elasticity	700	Mpa	ISO 527-1, -2
Flexural Modulus - 1% Secant	> 1000	Mpa	ASTM D790
ESCR F10 (10% Igepal, Method B)	> 1000	hrs	ASTM D790
FNCT (3.5 MPa, 2% Arkopal N100, 80°C)	> 150	hrs	ISO 16770
<b>Conformance Testing</b>			
Minimum Required Strength (20°C)	> 8.0	Mpa	ISO 12162
Hydrostatic Pressure Test (9.0 MPa @ 20°C)	> 100	hrs	ISO 1167
Hydrostatic Pressure Test (4.0 MPa @ 80)	> 1000	hrs	ISO 1167
Resistance to Slow Crack Growth (4.6 MPa @ 80 °C)	> 1000	hrs	ISO 1167
Resistance to Rapid Crack Propagation (Pc @ 0 °C)	> 6.0	bar	ISO 13477

Typical Properties	Typical Value	Unit	Test Method
<b>Impact</b>			
Tensile Impact Strength (Notched, Type 1, Method A, -30°C)	6.0	g/10 min	ISO 1133
Izod Impact Strength (Notched, Method A, 23°C)	0.33	g/10 min	ISO 1133
<b>Thermal</b>			
Melting Temperature	25	Mpa	ISO 527-1, -2
Oxidation Induction Time (200°C)	11	%	SO 527-1, -2
Vicat Softening Temperature (Method A/ 10N)	> 1000	%	ISO 527-1, -2
Deflection Temperature Under Load (0.45 MPa)	40	Mpa	ISO 527-1, -2
Deflection Temperature Under Load (1.8 MPa)	700	Mpa	ISO 527-1, -2

### Recommended Process Conditions 5

#### Processing Method: Pipe Extrusion; Sheet Extrusion

**Extruder Barrel Temperature: 200-230 °C**

**Melt Temperature: 205-240 °C**

#### Further Information

##### Health and Safety

1. Typical values: these are not to be construed as specifications.
2. The density parameter was determined on compression-molded specimens, which were prepared in accordance with procedure C of ASTM D4703, Annex A1.
3. Properties are based on compression-molded specimens, which were prepared in accordance with procedure B of ASTM D4703, Annex A1, using 100% HEX4460 PE80+ resin.
4. Values were obtained on 110 mm, SDR11 pipe made with HEX4460 PE80+ and an approved masterbatch.

5. Please note that, these processing conditions are recommended by manufacturer only for 100% HEX4460 PE80+ resin (not in the case of blending with any other compatible material), therefore because of the many particular factors which are outside our current knowledge and control and may affect the use of product, no warranty is given for the foregoing data. Moreover, the specific recommendations for resin type and processing conditions can only be made when the end use, required properties and fabrication equipment are known.

The resin will burn when supplied with excess heat and oxygen. It should be handled and stored away from contact with direct flames and/or ignition sources. While burning, the resin contributes high heat and may generate a dense black smoke.

Recycled resins may have previously been used as packaging for, or may have otherwise been in contact with, hazardous goods. Converters are responsible for taking all necessary precautions to ensure that recycled resins are safe for continued use.

The detailed information about safety, handling, individual protection and waste disposal is provided in the relevant Safety Data Sheet. Additional specific information can be requested via customer.

### **Conveying**

Conveying equipment should be designed to prevent accumulation of fines and dust particles. These particles can, under certain conditions pose an explosion hazard. We recommend that the conveying system will be equipped with adequate filters and be operated and maintained in the way that ensure no leaks develop.

### **Storage**

Polyethylene resins should be protected from direct sunlight and/or heat during storage. The storage location should also be dry, dust free and the storage temperature should not exceed 50°C. It is also advisable to process polyethylene resins (in pelletized or powder form) within 6 months after delivery, because excessive aging of polyethylene can lead to a deterioration in quality. Arya Sasol Polymer Company would not give any warranty to bad storage conditions which may lead to quality deterioration such as color change, bad smell and inadequate product performance

The information provided in this Product Data Sheet has been based upon the current level of knowledge and experience. They are not to be interpreted as a warranty for specific product characteristics. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. Customer is responsible for determining whether the products and the information in this document are appropriate for customer's use and for ensuring that customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Seller assumes no obligation or liability for the information in this document.

### Contact Us

7th Floor, unit 27, No. 22, Mirdamad St , Square Madar , Shahnazary St , Dovom Alley,  
Tehran, Iran

Tel: (+9821) 22222080

E-mail: [sales@gahargranulejavir.com](mailto:sales@gahargranulejavir.com)