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Technical Information

Neopolen® P 9230 ESD

Product Description

Neopolen P 9230 ESD is expanded Polypropylene supplied in the form ofbeads. The cells are largely closed.

Table 1:

Bulk density[1)] [kg/m³]	Average particle size [mm]	Average particle weight [mg]	Color[2)]
26 - 30	2.5 - 4.0	0.6 - 1.0	Black

[1)] Defined by KIP-Method PAA 1
[2)] Color deviations are possible

Delivery, Conveying, Storage

Neopolen P 9230 ESD is delivered in bulk by trucks. Packaged delivery in Big Bags by trucks is possible.

Unloading and conveying requires technical equipment designed for EPP beads.

Neopolen P 9230 ESD must be protected from the weather i.e. from rain, snow, direct sunlight and frost, as well as from excessive mechanical stress.

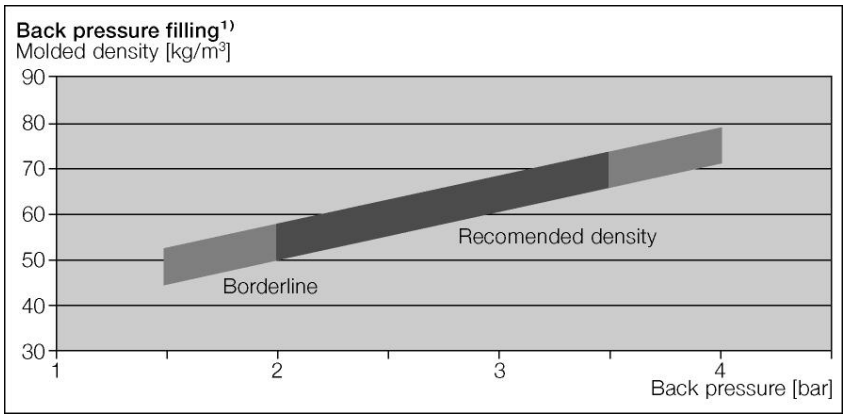
In order to comply with common regulations for the storage of combustible materials, welding sparks, electrical sparks, or other sources of ignition should be kept well away. Smoking should be forbidden.

Processing

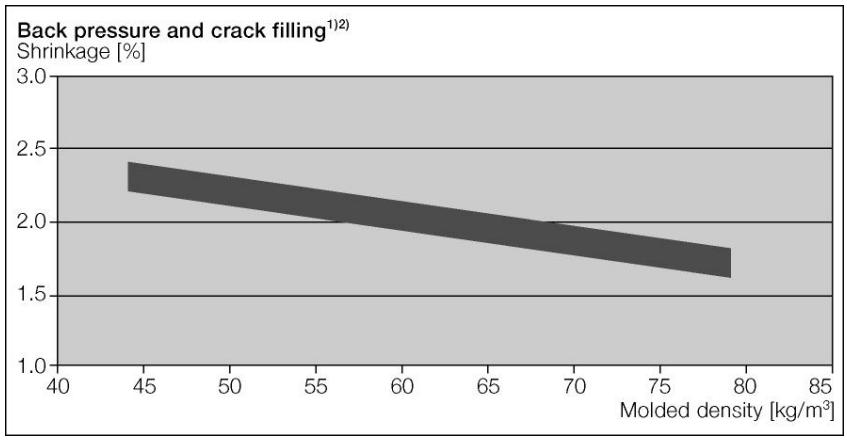
Neopolen P 9230 ESD is processed with molding machines typical for the EPP industry that are designed for a steam pressure of at least 5 bar.

It is normally processed by the “Back pressure technology”. In principal, “Crack filling” is also possible. Using a compression rate of 2, depending on the fill pressure, a molded density of 56 kg/m³ is achievable.

After pre-pressurization (2.5 bar, 8 h, RT and processing at 1.5 bar), a minimum density of 30 kg/m³ can be achieved at a shrinkage of 2.2 %.



[1)] The Processing data are determined on molded parts (300 x 200 x 60 mm) produced under standard conditions and steam pressure of 3.2 - 3.6 bar. The data applies for average bulk densities.



[2)] Shrinkage after oven curing (80 °C)

Properties

In order to measure the physical properties, parts with dimensions 300 x 200 x 60 mm were molded on a machine typical for the EPP industry under standard conditions. The values, as shown in the graphsand in table 2, can vary depending on part geometry and processing parameters.

Neopolen P 9230 ESD has a reduced surface resistance and thermal conductivity compared to standard products. Therefore, the product is preferred to manufacture ESD qualified parts according to DIN EN 100 015.

According to our experience, surface resistance decreases with increasing autoclave pressure and time. Values of 10^5 Ohm can be obtained. The surface resistance of a specific molded part depends on its shape and the molding conditions and should be determined individually by the customer.

Storage of molded parts under regular ambient conditions for a period of three years showed no change in their surface resistance and, with that, no change in their charge dissipating characteristics. It is not anticipated for this to change for longer periods. The value of the surface resistance is independent of humidity.

The fire behaviour of Neopolen P 9230 ESD is the same as Neopolen P standard products.

Table 2: **Physical properties of moldings made from Neopolen P 9230 ESD (guideline values)**

Property	**Test method**	**Unit**	**Material density (MD) as ISO 845 [kg/m3] (Core density)**			
			40	50	60	70
Tensile strength	DIN EN ISO 1798	[kPa]	600	740	880	1020
Elongation at break (100mm measuring length)	DIN EN ISO 1798	[%]	33	30	27	25
Compressive stress at 10 % strain at 25 % strain at 50 % strain	according to DIN EN ISO 844	[kPa]	 180 220 330	 240 290 440	 310 370 550	 390 460 670
Compression set (50%, 22 h, 23 °C) 24 h after stress release	DIN EN ISO 1856 (Method C)	[%]	28	27	26	25
Dimensional stability at heat (Linear size alteration after 4 d, 110 °C)	according to DIN ISO 2796	[%]	< 2	< 2	< 2	< 2
Thermal conductivity	DIN EN 12667	[$W \cdot m^{-1} \cdot K^{-1}$]	0.036	0.037	0.038	0.040
Water absorption (1day)	according to DIN 53 428	[Vol.-%]	<1	<1	<1	<1
Flammability sample thickness: 13 mm	FMVSS 302		← fulfilled at MD 30 [kg/m3] →			
Surface Resistance	DIN IEC 60093	[Ohm]	$<10^7$	$<10^7$	$<10^7$	$<10^7$

Further Technical Information

Detailed technical information concerning

– Delivery, conveying, storage
– Processing
– Physical and chemical properties
– Safety and environment

are available from:

https://www.knauf-industries.com/en/neopolen-epp-raw-material/

Product Safety and Environment

Neopolen P 9230 ESD is produced without the use of halogenated hydrocarbons or compounds containing heavy metals. It contains no materials that require declaration under the GADSL (Global Automotive Declarable Substance List, Version 3,0, www.gadsl.org).

At the time of delivery, the product contains no blowing agent and is not classified under dangerous goods regulations.

Neopolen P 9230 ESD presents no danger to water. (AwSV Germany 01.08.2017, App. 1).

Neopolen P 9230 ESD is recyclable.

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Necessary attention should also be given to the **precautions** necessary for handling chemicals.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

Knauf Industries Polymers GmbH
Schipkauer Str. 1
01987 Schwarzheide
Germany
Neopolen® (EPP raw material) - Knauf Industries (knauf-industries.com)