



OKIROL[®] E- 4F

Expandable Flame Retardant Polystyrene

Material description

Okirol[®] E-4F is expandable flame retardant polystyrene containing, apart from flame retardant agent, also pentane as the blowing agent. The product is supplied as spherical beads.

Application

Okirol[®] E-4F is used for the manufacture of low density blocks and panels intended for thermal and sound (when elastified) insulation in construction industry.

Products made of **Okirol[®] E-4F** have fire characteristics in accordance with **DIN 4102-1, class B1**

Property ^{1,3}	Method	Value	Unit
Bulk density	EN ISO 60	0,610	g/cm ³
Bead size	ISO 2591/1	1,0 – 1,6	mm
Bead size range: >95%	ISO 2591/1	0,8 – 1,6	mm
Blowing agent	ASTM 7132-05	5,0 – 7,0	% mass
Minimum density of expanded beads ²	-	14	kg/m ³
Density range of a moulded product	EN 1602	15 – 20	kg/m ³
Reaction to fire	EN ISO 11925-2	Class E ⁴	-

¹ Typical values that do not represent specification limit values

² 1st step pre-expansion, batch pre-expander

³ As many factors may affect the processing and application/use of **Okirol E-4F** we recommend that processors should make trial tests to determine the suitability of the product for a particular purpose.

⁴ Classification in accordance with EN 13501-1

Processing

Okirol[®] E-4F is processed in three stages: pre-expansion, aging and moulding.

Pre-expansion

The minimum density of expanded beads depends on the equipment and technique used. In a continuous pre-expander **Okirol[®] E-4F** products can have a typical minimum density of about 15 kg/m³. In a pressure batch pre-expander, **Okirol[®] E-4F** products can have a typical minimum density of 14 kg/m³ at a pressure between 0,20-0,35 bar.

Aging

Pre-expanded **Okirol[®] E-4F** beads should normally age for 12-24 hours, depending on the pre-expanded bead densities, ambient temperature, moulding equipment used and required density of the final product.





Moulding

The aged pre-expanded **Okirol® E-4F** beads are moulded in suitable moulds using steam pressures ranging from 0,5 to 0,9 bar and short cycle times. Moulded products should be stored in a closed, well-ventilated storage space.

Storage and handling

Prior to handling, for full instructions on storage and handling refer to Material Safety Data Sheet.

Okirol® E-4F is packed in cardboard octabins, with multilayer barrier bags, on wooden pallets having total dimensions of 1115x1115x1765 mm and total mass of 1040 kg (1000 kg net).

Okirol® E-4F should be stored in a storage space ventilated at floor level at a temperature up to 20°C. The product should not be exposed to direct or indirect sunlight because this may affect its processing properties. As processing properties become poorer with time it is recommended that stored, originally packed **Okirol E-4F** should be processed within 60 days. The blowing agent, i.e. pentane, is a volatile hydrocarbon, heavier than air; flammable, capable of forming an explosive mixture (processors are strongly advised to refer to the Material Safety Data Sheet). If the product is stored in unfavourable climatic conditions (great temperature variations and high moisture content), moisture can condense in barrier bags with which cardboard octabins are lined.

Safety

Okirol E-4F, expandable polystyrene, and its moulded products should not be exposed to open fire during storage, processing and use. Adequate ventilation must be provided in all storage areas and in processing areas especially to prevent accumulation of hydrocarbon vapours.

Physiological Properties

Okirol® E-4F meets the requirements of the European Directive 94/62/EC, European law on packaging material and the European Directive 2002/95/EC (WEEE/RoHS Directives) on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Okirol® E-4F must not be used in food packaging.

Sale

For further information about DIOKI products please contact DIOKI Commercial Department at:

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DIOKI reserves the right to changes

RPP-02-E4Fe-2009/1

