

Suncolor® PPE

Technical Notice
H-21-TM-Suncolor PPE
Edition: 03

Description:

Suncolor® PPE is an expandable EPS/PPE granulate, which can be processed into foams with increased requirements on mechanical and thermal properties.

The impact-absorbing characteristics are utilized especially when used as a sports helmet (e.g. bicycle helmet, riding helmet, motorcycle helmet).

Granulate geometry:

Suncolor® PPE is manufactured by an extrusion process and supplied in form of a lentil-shaped granulate.

Granulate diameter: 0.6-1.5 mm >90% by weight.

Pentane content:

Approx. 5% by weight (at the time of filling)

Water content:

< 0.3% by weight (at the time of filling)

Colours:

Suncolor® PPE black
Suncolor® PPE natural

Packaging and storage:

Suncolor® PPE is supplied in cardboard octabins (1100 kg) or steel drums (125 kg).

The packaging is not rainproof and must therefore not be exposed to outdoor conditions.

In order to obtain the desired properties of Suncolor® PPE, the raw material should be stored below 20 °C and used up within 6 months when packaged in octabins or 12 months when packaged in drums.

Shipping:

ADR-marking: substance no. 2211:

Polymeric beads, expandable

Class: 9

Packing group: III ADR

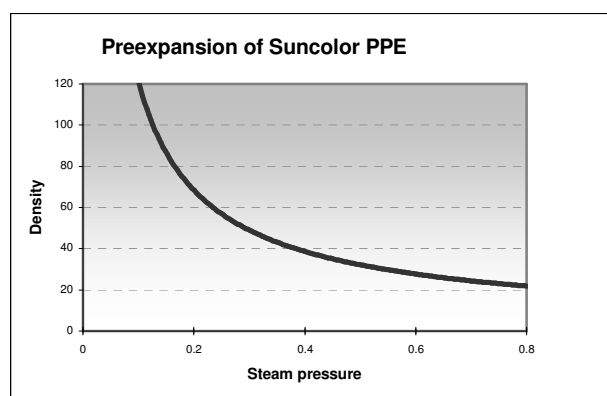
Processing:

Preexpansion:

Through the higher softening temperature, Suncolor® PPE can only be expanded in discontinuous preexpanders. In order to achieve comparable foam densities, higher steam pressures than for EPS are required.

The minimum volumetric weight of Suncolor® PPE is around 30g/l.

Setting the desired preexpansion density can only be performed experimentally, since it always depends greatly on the preexpander and the steam quality. The graphic is only intended for orientation purposes:



Intermediate storage:

Depending on the density, intermediate storage should be between 12 hours and 4 days.



Moulding:

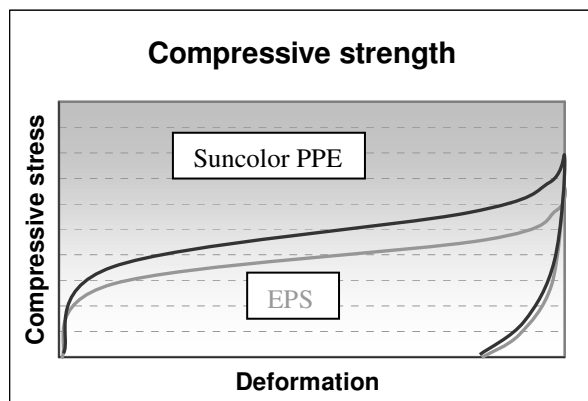
Suncolor® PPE can be processed on commercially available moulding machines.

Compared with EPS, steaming should be increased since optimum fusion is only achieved at higher temperatures and steam pressures because of the increased heat distortion temperature.

Steam pressures >1.0 bar are generally recommended.

Mechanical properties:

Compressive strength of Suncolor® PPE is approximately 15% higher than with EPS at identical moulded part density.



The long drawn-out flat force/distance curve under compression is an indication of the excellent properties as energy-absorbing padding material. The area below the curve and consequently the possible impact energy absorption of Suncolor® PPE is higher than that of EPS foams. Maximum energy absorption protects against excessive deceleration values during impact.

Thermal characteristics:

The heat distortion temperature of Suncolor® PPE foams has been improved by approximately 10°C compared with EPS. The maximum operating temperature of foams made of Suncolor® PPE depends on the load and the duration of the load. Contact without load of up to 104°C is possible for a short time while loads up to 20kPa at 90°C are possible over long periods.

Safety instructions:

Flammable pentane air mixtures may be generated during storage and processing of Suncolor® PPE. Adequate ventilation must be ensured for this reason. All conceivable sources of ignition must therefore be kept away and the generation of electric charges prevented.

Please note:

This Notice reflects our current knowledge. Suitability for concrete applications must be verified by the processor from a technical and legal point of view.

Subject to technical changes.