# Cera**PUR**® F15-60

## Technical Data Sheet

CeraCon

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EN

Cera**PUR**® F15-60b
Cera**PUR**® F15-60w

**Sealing** systems

# Cera**PUR**® F15-60

## The perfect solution.

Cera**PUR**® F15-60 is a single-component, thermally activated polyurethane material based on polyether polyols and aliphatic isocyanates with an extremely low proportion of free monomers (< 0.05 per cent by weight). With the help of the Cera**FLOW**® foam dosing technology in the high-pressure process and through the use of compressed air, a foam whose density can be continuously adjusted is produced from the raw material. This is directly applied to the components by machine („Formed In-Place Foam Gaskets“).

As a result of the low flow behaviour of the foam applied in this way, it is also possible to create 3D and overhead applications without running. No groove is required in order to produce a sealing bead, for example.

As a result of the physical foaming process, a foam with a predominantly closed-cell structure and outstanding material properties, such as excellent resistance to hydrolysis, very low water absorption and very good recovery behaviour, is created after curing.

Cera**PUR**® F15-60 is cured within a few minutes by the supply of heat above 70 °C. In this process, the structure and volume of the foam no longer changes. The heat can also be supplied by means of microwaves or, when applied to metallic components, by induction. After cooling to room temperature, Cera**PUR**® F15-60 is cured and can be mechanically stressed or installed.

Our Polymers Team is constantly working on the further development and new versions of our sealing materials in the laboratory specifically set up for this purpose.

## Fields of application

The areas in which Cera**PUR**® F15-60 is used are sealing against liquids, dust and dirt, as well as the damping of vibrations and sound. Due to the softness and the closed-cell structure, efficient seals against water penetration are possible even from a compression level of 20 %.

This also enables use in very thin-walled plastics, for example. As a result, component tolerances can be compensated for to a high degree and distortion as a result of extensive mating forces prevented. The spring effect of the 1K PUR foam, which is virtually constant over the entire application temperature range, can also be used, for example, in mechanical sensors and ultrasonic sensors

Due to the very good media resistance, seals made of Cera**PUR**® F15-60 are also permanently durable in contact with, for instance, disinfectants or solvents.

## Environmental compatibility

Cera**PUR**® F15-60 is not a dangerous good within the meaning of the EU transport classification and contains an extremely low proportion of free isocyanate monomers. The raw material cured by heat is not subject to labelling requirements and can be disposed of in normal household waste. No vapours or odours, which are harmful to health, are produced during processing.

Cera**PUR**® F15-60 is compliant with EC Directive 2011/65/EU (RoHS 2) for the avoidance of dangerous substances. It does not contain any hazardous substances according to the SVHC list of EU Regulation 1907/2006 (REACH Regulation) or any which are listed according to the PBT/vPvB criteria for the identification of persistent, bioaccumulative and toxic substances.

The maximum proportion of polycyclic aromatic hydrocarbons (PAH) is 0.0006 per cent by weight.*

*for Cera**PUR**® F15-60b

# Information on storage, processing and shelf life

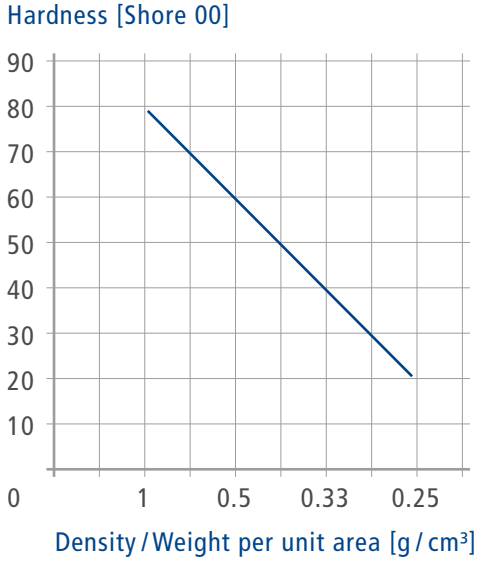
CeraPUR® F15-60 is supplied in 20 kg pails and 200 kg drums. It should be stored in its unopened original containers and protected from moisture, heat (incl. solar radiation) and external influences. Ideal storage temperatures are 10° C to 25° C – a higher temperature may result in an increase in viscosity.

The shelf life of CeraPUR® F15-60 in the unopened original drum under the aforementioned conditions is at least four months from the date of manufacture.

CeraPUR® F15-60 cures very slowly under the influence of water or humidity and forms carbon dioxide and insoluble compounds. Processing should be carried out at 15° C to 25° C.

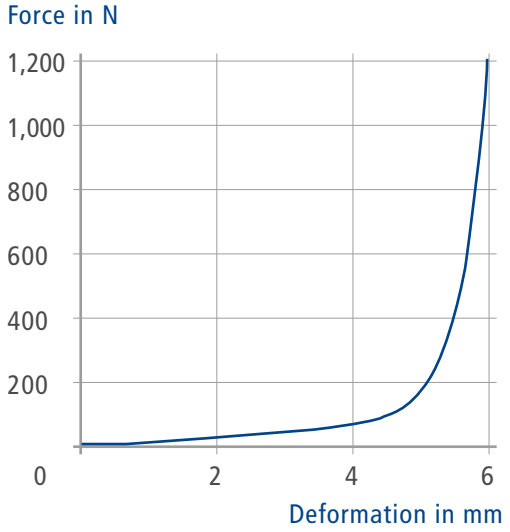
It is recommended to bring the containers intended for processing up to the right temperature at least 24 hours beforehand. For further information please refer to the safety data sheet or ask your specialist.

## Foam hardness




The Shore hardness of the foam decreases with increasing gas content. The hardness of seals is therefore freely adjustable within broad limits.

## Installation forces




Force-distance travel diagram of a foam bead (h: 7 mm, l: 100 mm, density / weight p. u. a.: 0.32 g / cm³). Up to a compression level of well over 50 %, the assembly forces remain low and increase almost linearly.

# Physical Properties

| Property | Standard | CeraPUR® F15-60 unfoamed & cured | CeraPUR® F15-60 foamed |
|---|---|---|---|
| Density / weight per unit volume [g / cm³]* | EN ISO 845 | 1.06 | 1.0 – 0.3 |
| Foamability* | – | up to 3.4 times the volume | |
| Colour | – | CeraPUR® F15-60b: black<br>CeraPUR® F15-60w: white | |
| Hardness [Shore 00]* | ASTM D 2240-91 | 80 ±5 | 80 – 40 ±5 |
| Water absorption [%]* | 24 h immersion in water at room temperature | < 5 % | |
| Temperature resistance | – | – 40° C to + 90° C, short-term up to 175° C | |
| Tensile strength [kPa]* | EN ISO 1798 | 2,167 | 1,090 – 368 |
| Elongation at fracture [%]* | EN ISO 1798 | 323 | 323 – 270 |
| Compression set [%]* | EN ISO 1856 | n.a. | < 12 %<br>(foaming factor > 3) |

*average values

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