

# Technical data sheet

## FERMAPOR K31-A-9841-7 / K31-B-5

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### General description

FERMAPOR K31 systems are addition-curing two-component systems for the manufacture of flexible polyurethane foams.

The respective components constitute a mixture of various base components and raw materials. The main ingredient of the A-components are multi-functional alcohols, or polyols. The B-components are MDI-based aromatic isocyanates and derivatives thereof.

Mixing the components A and B causes a chemical reaction, which produces a flexible polyurethane foam.

The foam does not have long term resistance to UV rays and must be protected against direct sunlight. It is also important to avoid allowing the seal to be exposed to standing water for long periods of time. For more information, see our "[Information regarding satisfactory FIPFG construction](#)".

After approximately 1 to 12 hours, the foam is completely hardened and can be used for applications which demand high standards for sealing and quality. The usage temperature range usually lies between -40 and +80 °C, and for brief intervals as high as +160 °C, depending on the test conditions. The user must perform testing for the respective application.

The exact hardening time depends on a variety of other influences such as temperature, moisture content, seal dimensions as well as the seal requirements and must therefore be evaluated by the customer.

#### **Important notes regarding the suitability of products**

The description of the possible fields of use of our products as well as the technical data and values only have a general character and does not mean that a certain product can be used under all conditions in the respective field of use. In this respect, the stated field of use is not a binding specification or usage provision. Due to the great number of environment variables and their influences (e.g. temperature, test specimens, size, interaction with substrates, influence of machines, or the like) you as our customer must check whether the product is suitable for your specific field of use. We will be pleased to assist and advise you in this respect.

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### Characteristics

**Addition-curing two-component PUR foam**

**PUR material is directly applicable by means of a mixing and dispensing machine**

**Liquid material, which can be applied to 2-D components, with a groove.**

**Stable for brief intervals at up to +160°C**

**Mixed cellular foam structure**

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### Benefits

**Does not require additional stove treatment for hardening, but the process can be accelerated with heat**

**Good resilience**

**K31-A-9841-7 and K31-B-5 are applied in the proper mixture ratio directly onto the component being sealed by means of a mixing and dispensing unit.**

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### Typical properties of the system FERMAPOR K31-A-9841-7 with K31-B-5 in a gravimetric mixing ratio 3.5 : 1

#### Note to specification authors

The following information is not intended for the compilation of specifications, and is to be taken as an aid for initial orientation.

For assistance with the compilation of specifications, please contact the *Application Technique* Division at Sonderhoff Chemicals (see pg. 6 for *contact information*).

Parameter	Standards	Value	Unit
<b>Basic raw material</b>			
<b>Viscosity</b> (A-component)	DIN EN ISO 2555	500	mPa*s
<b>Viscosity</b> (B-component)	DIN EN ISO 2555	120	mPa*s
<b>Density</b> (A-component)	DIN EN ISO 2811-1	1.01	g/cm <sup>3</sup>
<b>Density</b> (B-component)	DIN EN ISO 2811-1	1.20	g/cm <sup>3</sup>
<b>Mixed*</b>			
<b>Pot life</b>	PV-111	60	Sec.
<b>Tack-free time</b>	PV-111	14	Min.
<b>Cured *</b>			
<b>Colour</b>	-	black	-
<b>Density</b>	DIN EN ISO 845	0.26	g/cm <sup>3</sup>
<b>Surface hardness</b>	DIN 53505 and ASTM D 2240	58	Shore 00

**\*Note:** The measurement parameters listed are non-binding! They are not to be seen as guaranteed properties of a foam seal applied on a component. The information shown above applies to a cupshot weighing 10 – 20 grams and is intended as a rough orientation aid. It is not a replacement for detailed testing for the respective application.

Is the gasket material exposed to atmospheric weather conditions the gasket properties has to evaluate by the customer in their construction at the expected conditions, especially in contact with water close to the freezing temperature. Regarding operating tests and specific features of the material contact our customer application department, please. You can find the contact information at the successional point “technical customer support”.

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### User manual

#### Processing information

FERMAPOR K31 systems were developed especially for direct processing with two-component mixing and dispensing units and are not suitable for manual processing.

#### Preparing the component

It must be ensured that the surface upon which the foam will be applied is free of grease, release agents or any contaminations, because this would adversely affect the adhesion. In addition, the temperature of the component and the environment and storage conditions can affect the hardening speed and the adhesion properties.

Based on experience, FERMAPOR K31 systems adhere well to powder-coated surfaces. However, when assessing the adhesion quality, the applied material is not the only key factor. The surface upon which the foam is to be applied also plays an important role.

In addition to the type of coating used, other parameters such as curing duration and coating temperature also influence the adhesion. Therefore, it is recommended in all cases to perform an adhesion test in advance using the relevant components.

If there is no adhesion, it is possible to carry out pre-treatment with plasma, corona, flame or primer.

Feel free to contact our *Application Technique* Division if you have any questions (*see pg. 6 for contact information*).

#### Preparing the material

The A-component must generally be charged with air. The A-component is air-charged inside the one-day container of the processing machine and can be controlled both manually and automatically.

When using a filling station, it is important that the liquid A-components are mixed for several minutes in their delivery containers, prior to being transferred to the one-day container, because the individual ingredients can separate over extended storage periods. This process is necessary due to the different densities and does not indicate a material flaw.

B-components do not require an additional air-charging treatment. It is also not necessary to stir them in advance.

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Please keep in mind that the A- and B-components are susceptible to moisture and all contact with moisture must be avoided. Opened containers must be closed immediately and continuously dried with compressed air.

Feel free to contact our *Application Technique* Division if you have any questions (*see pg. 6 for contact information*).

### Processing temperature

A processing temperature between 18 and 26 °C is recommended for flexible foams. With higher temperatures, a temperature control unit should always be used.

Temperatures above 40° C are not recommended.

It should be ensured that exposure to air movement is avoided during the hardening process, or between the time when the foam is applied and the time when it has achieved a tack-free state.

### Process technology

The components are mixed by a mixing and dispensing system which is suitable for operation with variable mixing ratios. The precisely dispensed components are forced together by a dynamic mixing element and then applied precisely to the contour by a robot.

Compliance with the sealing requirements, an optimal mixture, consistent foam quality and the precise dosing quantity of the foam seal can only be ensured when an automatic mixing and dispensing unit is used.

### Safety instructions

The product safety information required for safe handling is not included in these technical specifications. Therefore, please be sure to request the appropriate safety information sheets and be informed of all health risks and hazards involved in handling both of the components.

It should be pointed out here that appropriate protective clothing and equipment is required when handling the liquid B-component, and that the B-component may not be splashed or sprayed.

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### Technical customer support

For further information and technical consultation regarding this product, please contact the *Application Technology* Division with headquarters in Cologne.

**Email:** [postfach-anwendungstechnik@sonderhoff.com](mailto:postfach-anwendungstechnik@sonderhoff.com)

**Tel:** + 49 221 95 685 0

### Shelf life and storage

Original sealed containers have a shelf life of six months. Under some circumstances, it is possible to extend this period by three months.

B-components are susceptible to frost. Storage should be at room temperature and never fall below - 5°C, to avoid crystallization.

The A-component is not susceptible to frost, but the containers should nonetheless be kept in a dry location that is not too cold.

### Packaging

The smallest packaging size for this product is 25 kg pails. In addition, FERMAPOR K31 products are available for order in 180 kg drums or 1000 kg IBC's.

#### **Important notes regarding the suitability of products**

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