Ekoprodur® 4540W

POLYURETHANE SYSTEM

TECHNICAL INFORMATION (TDS)

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1. PRODUCT DESCRIPTION

EKOPRODUR 4540W is a two-component polyurethane system for producing closed-cell rigid foam with enhanced thermal insulation properties.

POLY COMPONENT (polyol mixture)	EKOPRODUR 4540W POLY
ISO COMPONENT (isocyanate)	ISO KOMPONENT B

2. APPLICATION

EKOPRODUR 4540W is a polyurethane system used to produce thermal insulation. It is used in the production of boilers, water heaters, tanks and where increased mechanical strength is required.

3. COMPONENTS CHARACTERISTIC

POLY COMPONENT– a polyol mixture in the form of an oily liquid without suspensions, with a yellow to orange color.
ISO COMPONENT – a mixture of aromatic polyisocyanates, mainly diphenylmethane diisocyanate. Liquid of brown color, without suspensions.

Parameter	POLY	ISO	Unit
Density at 20°C	1,10 ± 0,02	1,22 ± 0,02	g/cm^3
Viscosity at 20°C	1350 ± 300	350 ± 100	mPa·s

4. FOAMING CHARACTERISTICS IN LABORATORY CONDITIONS

Reaction times and apparent density of the core were measured in laboratory conditions (at 20°C) with manual foaming in a laboratory vessel – stirrer about 5000 rpm.

Weight ratio of POLY:ISO components	**100 : 150**	
Parameter	**Value**	**Unit**
Cream time	28 ± 5	s
Gel time	120 ± 15	s
Tack free time	195 ± 25	s
Apparent core density	48 ± 2	kg/m^3

5. RECOMMENDED PROCESSING CONDITIONS

EKOPRODUR 4540W can be processed with low-pressure and high-pressure foaming machines.

Weight ratio of POLY:ISO components	**100 : 150**	
Parameter	**Value**	**Unit**
Raw material temperature	18 – 22	°C
Ambient temperature	15 - 25	°C
Lining/mold temperature	30 – 45	°C

IMPORTANT: With aluminum or stainless steel cladding, it may be necessary to prepare the substrate mechanically or chemically to increase adhesion.

The foam density in the finished product should not be less than 52 kg/m^3. The method of mixing and pouring the system should provide uniform filling of the element with foam. Demoulding time depends on the size of the form, the temperature of the form and temperature of the POLY and ISO components. Full mechanical properties of the foam are obtained after 48 hours of seasoning.

Before starting work with the EKOPRODUR 4540W system, please refer to the Safety Data Sheets of both components.

6. FOAM PROPERTIES

The following results were obtained for the finished insulation product prepared from the EKOPRODUR 4540W system by pouring into the mold.

Parameter	Value	Unit	Standard
Apparent density of the core	≥ 52	kg/m^3	EN 1602
Fire classification	F	-	EN 13501-1
	B3	-	DIN 4120
Compressive stress at 10% relative deformation, σ_{10}	≥ 330	kPa	EN 826
Thermal conductivity coefficient $\lambda_{mean,i}$	0,024	W/(m·K)	EN 12667
Closed-cell content	≥ 90	%	EN ISO 4590

7. PACKAGING

Metal drums with a capacity of 216 dm^3, IBC container with a capacity of 1000 dm^3.

8. RECOMMENDED STORAGE CONDITIONS

Both components of the system should be stored in tightly closed containers in dry place at a temperature of 10 - 25°C. Protect against moisture and direct sunlight. Shelf life of the component POLY stored in original sealed manufacturer's packaging, under recommended conditions, is **6 MONTHS.**

9. REGULATORY AFFAIRS AND CERTIFICATS

- EKOPRODUR 4540W does not contain ozone-depleting foaming agents in accordance with the European Union's regulations on the marketing and use of controlled substances - Regulation (EU) No 2024/590 of 7 February 2024.
- The transport regulations are applied as indicated in section 14 of the product safety data sheet.

10. ADDITIONAL INFORMATION

Data included in this technical information are based on the results of our laboratory tests and practical experience as well. This data does not guarantee the properties of the final product. The results obtained may differ from those listed above especially when the use of the product under the conditions other than originally intended. Hence, we recommend testing performance of the product for specific application at own degree. Foam application and conditions of use are beyond manufacturer control and contractor is responsible for correct selection. Guidelines for use are included in technical Information sheets (TDS) and safety date sheets (SDS). Failing to meet the recommended conditions can have negative impact on the foam application process and its parameters.

IMPORTANT: We are glad to provide technical and substantive assistance in the implementation and use of the EKOPRODUR 4540W polyurethane system. At the same time, when necessary, we help in adjusting and selecting important parameters. In all matters related to the purchase and use of polyurethane system EKOPRODUR 4540W, we encourage you to contact our technical and commercial representative directly or by writing to prodex@pcc.eu