TECHNICAL INFORMATION (TDS)

EKOPRODUR S0329

POLYURETHANE SYSTEM

Date of preparation: 01.10.2010
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Version: 10.4

SECTION 1: PRODUCT DESCRIPTION

EKOPRODUR S0329 is a two-component system (A+B) designed for the production of closed-cell self-extinguishing rigid polyurethane foam.

COMPONENT A (polyol mixture):	EKOPRODUR S0329
COMPONENT B (isocyanate):	EKOPRODUR B

EKOPRODUR S0329 does not contain any foaming agents that deplete the ozone layer. This is in accordance with the provisions of the European Union (EU) Regulation on Ozone Depleting Substances (ODS Regulation) - No. 1005/2009 dated September, 16th 2009.

This polyurethane system has been introduced to the market in accordance with the EU Regulation No. 305/2011, together with an assessment of the performance made in accordance with the European harmonized standard EN 14315-1:2013. This product has CE marking and Declaration of Performance No. 01-2017-EN.

SECTION 2: APPLICATION

EKOPRODUR S0329 is designed to perform thermal insulation of internal and external walls and ceilings by spraying.

EKOPRODUR S0329 is processed with the help of specialized high pressure blowing aggregates, equipped with a spray head.

SECTION 3: COMPONENTS CHARACTERISTICS

COMPONENT A

Formulated polyols mixture in the form of oily liquid, dark colour, without suspension.

Density at 20°C	1.15 ± 0.02 g/cm^3
Viscosity at 20°C	430 ± 50 mPa·s

COMPONENT B

Mixture of aromatic polyisocyanates, especially diphenylmethane diisocyanate. Brown liquid without suspension.

Density at 20°C	1.22 ± 0.02 g/cm^3
Viscosity at 20°C	350 ± 100 mPa·s

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SECTION 4: FOAMING CHARACTERISTICS IN LABOLATORY CONDITIONS

Reaction times[1] as well as apparent core density[2] were measured under the laboratory conditions (at 20°C)

Cream time[1]	3 ± 1 sec.
Gel time[1]	7 ± 3 sec.
Tack Free time[1]	9 ± 4 sec.
Apparent core density	36 ± 2 kg/m^3

SECTION 5: RECOMMENDED PROCESSING CONDITIONS

The recommendations are based on experience in applying the foam spray with the machine Graco Reaktor H-XP3 with the gun PROBLER P2 ELITE (01 mixing chamber).

The volumetric ratio of components A : B	**100 : 100**
Temperature settings on the machine:	
Heating temperature A and B:	35-50°C
Heating the hoses:	35-50°C
Components pressure:	70-100 bar (1015-1450 psi)
Components temperature (in barrels):	15-30°C
Ambient temperature:	10-35°C
Recommended surface temperature:	15-50°C
Relative ambient humidity:	70%
Humidity of porous base:	< 15%
Humidity of non-porous base:	0%

Insulated surfaces should be prepared before, should not contain dust, water, oil, loose particles and other substances that could reduce the adhesion of the foam.

Before performing the spraying, the insulated as well as adjacent surfaces such as windows, doors, floors, furniture, etc., should be protected to prevent accidental contamination during spraying - keep in mind that sprayed foam has very good adhesion and can be difficult to remove

[1] *Reaction times* are measured from the beginning of mixing. *Cream time* – until the moment of rising the reaction mixture's volume. *Gel time* – until the moment of drawing out the gelled fibres from the foam. *Tack free time* – until the moment when the surface of the foam is not sticky. (The procedure according to the internal instructions **IJ 11 02**).
[2] *Apparent core density* - foam weight divided by the cup's volume (according to EN 1602:2013-07).

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from the undesired sites.

Pressure setting for Component A and the Component B should be the same.

To achieve proper insulation layer you should do spraying of at least 2-3 uniform spray foam layers so that the total thickness of the insulation is not less than 30 mm. All layers of the insulation should be done during one day. If the foam is exposed to direct UV radiation (sunlight) it should be painted by at least two layers of protective paint (according to information provided by paint manufacturer).

IMPORTANT: *Do not exceed the recommended thickness of the layers - maximum thickness is* ***35 mm.***

During processing the system please keep in mind all tips and information included in the MSDS sheets for both components.

SECTION 6: PROPERTIES OF SPRAYED FOAM

The measurements were carried out on foam cut from samples made using a special spraying machine.

Apparent core density:	≥ 36 kg/m^3	EN 1602:2013-07
Fire classification:	E	EN 13501-1+A1:2010
Short-term water absorption by partial immersion, $\mathbf{W_P}$	≤ 0.11 kg/m^2	EN 1609:2013
Thermal conductivity:		EN 12667:2002
$\boldsymbol{\lambda}_{\mathbf{mean,\,i}}$	0.021 W/(m·K)	
$\boldsymbol{\lambda}_{\mathbf{90,\,90}}$	0.022 W/(m·K)	
Value to aging, $\boldsymbol{\lambda}_{\mathbf{D}}$ for the thicknesses:		EN 12667:2002
d_N < 40 mm	0.027 W/(m·K)	
40 mm ≤ d_N < 60 mm	0.025 W/(m·K)	
d_N ≥ 60 mm	0.024 W/(m·K)	
Compressive stress at 10% relative deformation, $\boldsymbol{\sigma}_{\mathbf{10}}$	≥ 270 kPa	EN 826:2013-07
Resistance coefficient of water vapour diffusion, $\boldsymbol{\mu}$	35-50	EN 12086:2013-07
Temperature stability:		EN 1604:2013-07
70°C, 90% RH, after 48 h	d ≤ 4%	
	sz ≤ 4%	
	g ≤ 1%	

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-30°C, after 48 h	d ≤ 2% sz ≤ 2% g ≤ 0.5	
Total relative deformation: 48 h, 20 kPa, 80°C	≤ 2.57%	EN 1605:2013-07
Adhesion of the foam perpendicularly to the surface:	≥ 300 kPa	EN 1607:2013-07
Closed-cell content:	≥ 90%	EN ISO 4590:2005
Usage conditions	-30 - 100°C	

SECTION 7: PACKAGING

Metal drums with a capacity 200 dm^3, IBC with a capacity of 1000 dm^3.

SECTION 8: RECOMMENDED STORAGE CONDITIONS

Dry place at 15 - 25°C. Protect from moisture and direct sunlight. Both components should be stored in tightly closed containers. Shelf life in original manufacturer's packaging and stored under normal conditions is **3 MONTHS** from the date of manufacture.

SECTION 9: ADDITIONAL INFORMATION

Data included in this technical information are based on the results from the tests performed in our laboratory as well as on the practical experience. These data do not guarantee the properties of the final product. The results obtained may differ from those listed above especially in the case when the use of the product is under the conditions other than originally intended.

IMPORTANT: *We are happy to provide technical and substantive assistance in implementing and applying polyurethane system EKOPRODUR S0329. At the same time when it is necessary and possible we help in adjusting relevant parameters. In all matters related to the purchase and use of polyurethane system EKOPRODUR S0329 we encourage you to use a direct contact to our technical and commercial representative or by writing to prodex@pcc.eu .*

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