

**TECHNICAL DATASHEET
EKOSPRAY® POLYURETHANE SYSTEM**



EKOSPRAY®	
Components	A-component: EKOSPRAY® POLYOL SD382/28 B-component: EKOSPRAY® ISO
Material description	2 component PU sprayfoam system. Contains fluorinated greenhouse gases (HFC365mfc/227ea).
Application	EKOSPRAY® is a (H)CFC-free two component PUR spray system, to use as internal insulation material for industrial, agricultural and residential buildings. The system can be applied on both horizontal and vertical substrates and due to its high reactivity, it is also very well suited for overhead spraying.
Application areas	Insulation on and under floors, ceilings, agricultural insulation, industrial buildings, tank insulation, etc.

Product properties			
	A-component	B-component	Unit
Specific mass, 20 °C	1 130–1 180	1 210–1 250	g/l
Viscosity, 20 °C	200–400	200–400	mPa.s
Mixing ratio			
Parts by weight	100	107–109	
Parts by volume	100	100	

Typical foaming properties (handmix, 20 °C, 3 000 rpm)			
		Value	Unit
Reactivity	Cream time (CT)	2 ± 1	s
	Gel time (GT)	6 ± 2	s
	Tack free time (TFT)	8 ± 2	s
Density	Core density	28 ± 3	kg/m3
	Cup density	35 ± 3	kg/m3

Packaging	
EKOSPRAY® POLYOL SD382/28 can be supplied in	
Plastic cans	30 kg nett
Metal drums	60/225 kg nett
IBC's	1 125 kg nett
Bulk	23 000 kg nett
EKOSPRAY® ISO 30 can be supplied in	
Plastic cans	30 kg nett
Metal drums	60/250 kg nett
IBC's	1 250 kg nett
Bulk	23 000 kg



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Shelf life and storage			
	A-component	B-component	Unit
Storage temperature	5–30	5–30	°C
Shelf life (in closed, sealed packaging)	3	6	months

Processing
<p>Due to its high reactivity, this system (exothermic reaction) can only be processed by suitable 2 component spray machines that were especially designed for this purpose. These machines are equipped with constant heating of the raw materials and hoses to the gun. The heating must be able to heat both components during spraying to 40°C-60°C. The mixing ration should always be 100:100 parts by volume.</p> <p>To get a perfect mixing, the pressure of both A- and B-component should be at least 60 bars at the gun. Generally, this can be realized when the pressure of both components in the machine is about 90 bars during spraying. Pressure loss due to length and diameter of the hoses and the type of mixing chamber, should always be taken into account (pressure loss could reach 30 bars). A pressure difference between A- and B-component should not exceed 15 bars.</p> <p>Good mixing of both components in the right ratio is essential to obtain the optimal foam properties.</p>

Treatment of substrate
<p>All materials that could interfere with the adhesion of the applied PUR foam (e.g. oil, grease, dust, debris, water, ice) should be removed. Substrates that are not suitable to give a good adhesion (e.g. aluminum, steel, sandy concrete) should be treated with an adhesion promoter or coating.</p> <p>The substrate should be absolutely clean and dry and should have a minimum temperature of at least >5°C, but preferably at least >15°C. When surfaces are colder and/or not dry enough, a bad adhesion will be very probable. A humid substrate will cause, amongst others, blisters, a high amount of open cells, bad compressive strength, possible shrinkage and a bad adhesion.</p> <p>In case of doubt, the adhesion should be tested on the substrate or equivalent sample.</p>

Application of foam
<p>The foam should be applied in layers with maximum thickness of 40 mm. Higher thickness can be obtained by applying multiple layers. The density of the foam will be between 35 and 50 kg/m³. If a total thickness is needed exceeding 120mm, it is advisable to use layers of maximum 30 mm and to take enough time between the layers, until the core temperature of the previous layer has reached 25°C maximum.</p> <p>For outside applications, use a suitable UV-resistant, vapor permeable and water repellent coating as soon as possible to protect the PU foam. The coating and PU foam should be inspected regularly for mechanical damage and/or disintegration. Damages need to be treated immediately.</p> <p>Make use of protective clothing for the whole body and eyes when working with both liquid components. Protect yourself from breathing MDI. Use respiratory equipment, preferably a self-contained or fresh air-supplied respiratory protective device. Make sure to have enough ventilation when applied indoors, amongst others to have enough cooling. A target value is refreshing per hour of 30x the volume of the room. Check the safety data sheets for further information on personal and environmental protection.</p>



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	Value	Unit	Method	EN14315-1
Density	28	kg/m ³	EN 1602	FRC28(20)
Reactivity (CRT / GT / TFT)	2 / 6 / 8	s		CT2(20) GT6(20) TFT8(20)
Thermal conductivity 10 °C (λ_i) Initial thermal conductivity 10 °C (λ _{90/90}) Aged	≤0,022 0,022 See performance chart	W/mK	EN12667	
Compressive strength	≥ 150	kPa	EN826	CS(10\Y) 150
Adhesion to substrate	≥ 100	kPa	EN1607	A3
Closed cell substrate	≥ 90	%	ISO 4590	CCC4
Dimensional stability 70 °C/90 % RV, 48 h. – length + width / thickness -20 °C, 48 h. – length + width / thickness Deformation (168 h) 40 kPa load 70 °C	≤ 9 / ≤ 5 ≤ 2 / ≤ 1 ≤ 5	% % %	EN1604	DS(70,90)2 DS(-20,-)2 DLT(2)5
Fire behaviour Euroclass	E		EN13501-1	E
Water absorption	≤ 0,3	kg/m ²	EN 1609	W0,3

Performance chart

Thickness (mm)	Diffusion open facing or no facing		One side diffusion open facing and one side diffusion tight facing		Two sides diffusion tight facing	
	Declared aged thermal conductivity (λ _D)	Thermal resistance (R _D)	Declared aged thermal conductivity (λ _D)	Thermal resistance (R _D)	Declared aged thermal conductivity (λ _D)	Thermal resistance (R _D)
40	0,027	1,48	0,026	1,54	0,023	1,74
45	0,027	1,67	0,026	1,73	0,023	1,96
50	0,027	1,85	0,026	1,92	0,023	2,17
55	0,027	2,04	0,026	2,11	0,023	2,39
60	0,027	2,22	0,025	2,40	0,023	2,61
65	0,027	2,41	0,025	2,60	0,023	2,83
70	0,027	2,59	0,025	2,80	0,023	3,04
75	0,027	2,78	0,025	3,00	0,023	3,26
80	0,026	3,08	0,025	3,20	0,023	3,48
85	0,026	3,27	0,025	3,40	0,023	3,69
90	0,026	3,46	0,025	3,60	0,023	3,91
95	0,026	3,65	0,025	3,80	0,023	4,13
100	0,026	3,85	0,025	4,00	0,023	4,35
105	0,026	4,04	0,025	4,20	0,023	4,56
110	0,026	4,23	0,025	4,40	0,023	4,78
115	0,026	4,42	0,025	4,60	0,023	5,00
120	0,025	4,80	0,025	4,80	0,023	5,22
125	0,025	5,00	0,025	5,00	0,023	5,43
130	0,025	5,20	0,025	5,20	0,023	5,65
135	0,025	5,40	0,025	5,40	0,023	5,87
140	0,025	5,60	0,025	5,60	0,023	6,09
145	0,025	5,80	0,025	5,80	0,023	6,30
150	0,025	6,00	0,025	6,00	0,023	6,52

Other foam properties

		Value	Unit	Method	
Airtightness	30–40 mm	< 0,009	m ³ /(hm ²)	EN 14122	
	60 mm	< 0,009			
Water vapour permeability	Thickness: 97 mm	μ = 134		EN 12086	
VOC emission	Total	170	μg/m ³	EN 16000	
	Class décret DEVL1101903D	A+			
Leachable chlorine		< 20	mg/kg	ASTM C871-04	
Contact sound absorption	ΔL_{lin} ΔL_w	60 mm	250 mm	dB	ISO 10140-3
		2	4		
		13	15		
Dynamic stiffness	E_{dyn}	8,5	MN/m ²	EN 29052-1	

Remark

All our products must be processed by competent persons. In case of doubt you must contact us. The fire risk must be taken into account when processing polyurethane. All necessary measures must be taken to prevent firing. Suitable fire extinguishers must also be present in the immediate vicinity. When used in indoor applications the foam surface must always be covered with an adequate fire-resistant layer. When used outdoors the foam surface must always be provided with coating.

Our recommendations with regard to technical application, whether verbal, in writing or by any means of tests have been drawn up to the best of our knowledge and understanding, but are intended as indicative only, also in relation to any third-party entitlements. They do not discharge you or your obligation to check products delivered by us for their suitability for the intended procedures and purposes.

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