

## Technical Data Sheet

# PUREX AN

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### 1. Product description

PUREX AN is a two-component aliphatic polyurea system for the production of high quality coatings e.g. polyurethane surfaces of spray foam, aromatic polyurea coating concrete, metal and wood. Purex AN can be used as top coat for aromatic polyurea systems or as self-contained coating. Our product offers excellent mechanical properties to the finished coating. PUREX AN is a pure aliphatic polyurea which allows you to perform fast seamless curable coatings applied using the unit in areas where UV protection is needed.

### 2. Application

PUREX AN coating are used as waterproofing and UV- protection coatings. Spraying polyurea allows permanent protection of steel and concrete structures exposed to the chemical environment and water. These coatings are used for e.g.:

- UV protection of aromatic coatings
- Concrete protection;
- automotive industry: surfaces prone to corrosion and mechanical damage, and loading spaces in busses
- surfaces exposed to high temperatures up to 140°C and occasionally 180°C

### 3. Technical data:

#### Physical properties of the liquid components

Viscosity (polyamine) in 25°C:	450 ± 100 mPa*s	Viscosity (prepolymer) in 25°C:	450 ± 100 mPa*s
Density (polyamine) w 25°C:	1,03 ± 0,02 g/cm <sup>3</sup>	Density (prepolymer) in 25°C:	1,04 ± 0,02 g/cm <sup>3</sup>
Colour (polyamine)	white	Colour (prepolymer)	transparent

#### Processing parameters

A component temperature (polyamine):	60 – 75 °C	Pressure	160 – 200 bars
B komponent temperature (prepolymer):	60 – 75 °C	Room temperature:	+ 5°C - 40°C
Barrel components temperature	40 – 50 °C	Surface temperature:	+ 5°C - 35°C
Hoses temperature	60 ~ 75 °C	Air humidity:	max. 80 – 85%

#### Mixing ratio and reaction time

A : B components ratio (by weight)	100 : 101	Gel time in 20°C:	> 45 s.
A : B components ratio (by volume)	100 : 100	Tack free time:	95 – 120 s.

#### Mechanical parameters of ready coating\*

Applied coating's density:	~ 1050 g/dm <sup>3</sup>	Shore hardness as per EN 868	min. 45
Elongation at break as per EN ISO 527	min. 550 %	Pull-off properties to concrete surfaces as per EN 1542	A – cohesive damage
Tensile strenght as per EN ISO 527	min. 18 MPa	Tear resistance as per ISO 34-1 (B method)	min. 40 N/mm

\* badania the tests have been performed after 48 hours for 1,2 – 1,3 mm thick coating applied in two layers by cross method. While spraying the layer the machine temperature for both A and B component has been set as 65 °C, hoses temperature as 70°C and working pressure as 180 - 190 bars. The spraying has been performed by use of Izoler machine with AP FUSION spraying gun and AR 2929 nozzle.

### 4. Suggested processing method

#### Surface preparation:

Before spraying the surface should be cleaned in order to achieve a clean and smooth coating. The substrate should also be free of any impurities such as: oil, dust, grease, loose rust and other undesirable elements from which influenced by the deterioration of adhesion of the coating to the substrate. In order to achieve an even surface the substrate must be primed and aligned. For this purpose, you can use one or two-component primer (primer) which closes pores and produces a surface layer containing no defects (concrete surface). For concrete surfaces is recommended to use a two-component polyurethane primer PRIMER C. If Purex AN is sprayed on Purex AM it is necessary to do it with maximum 3 hours break. After this time PRIMER C should be used

#### Dew point temperature:

During the application of the insulation coating pay special attention to the weather condition and particularly in relation to the dew point temperature - the temperature of condensation/water condensation. The substrate temperature during the application must be at least 3°C higher than the dew point temperature. Dew point temperature can be determined using a measuring instrument or from the table as per the following scheme:

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Air temperature= **21°C**

Relative humidity of air = **75 %**

Dew point temperature from the table = **16,4°C**

The hereinabove scheme should not be applied if the shell surface temperature is less than **19,4°C** ( $16,4^{\circ}\text{C} + 3^{\circ}\text{C} = 19,4^{\circ}\text{C}$ )  
The dependency table of the dew point temperature and the relative humidity of the air located at the end this technical data sheet.

### **The thickness of the sprayed coating PUREX AN.**

The recommended thickness of the applied coating is min. 2,0 mm and it is sufficient to provide good waterproofing properties and produce a surface with a good chemical resistance and mechanical properties. In order to achieve the desired thickness of the coating layer PUREX AN. Recommended method is applied with a cross. Depending on the application, the coating thickness should be selected for a given application.

### **Breaks in applying the coating layers PUREX AN.**

Application of polyurea coating on vertical and horizontal surfaces has to be performed continuously. While applying PUR PRIMER C primer and after the prime coating has dried, a water-permeable coating needs to be applied within 12 – 24 hours. If PUREX AN is then applied predominantly on the old surface polyurea in an interrupted matter the time interval can not be longer than two hours. With a longer period of time PUR PRIMER C covering has to be applied to the old surface width of at least 30 cm.

### **Spraying coating PUREX AN on PUR foam.**

In case of applying PUREX AN coating on polyurethane foam by spraying e.g. PUREX NG-0440 we must wait at least 24 hours to cure the foam and stabilize the exchange of gases from the interior of the spray and the air.

### **Caution:**

Do not expose isocyanates to moisture. Never store supplies of isocyanates in larger amount. Never leave A and B components in the material-filled machine for more than 2 to 4 weeks. If the machine has been nor used for longer period of time it is advised to clean the equipment thoroughly and fill the machine with solvent.

PUREX AN is intended for qualified staff/ experts use. Do not apply PUREX AN on wet surfaces.

Prior to application please acquire all any information about the product. Other uses not mentioned in this data sheet are possible only after prior agreement and technology department confirmation.

## **5. Transport and storage**

The components need to be transported and stored in tightly closed containers in 10 – 30°C. Component B needs to be protected against moisture and stored in more than 10°C before solidization occurs. In case solid particles has formed in B component it should be heated for 24 h in 40 - 50°C. In case of storing in original packaging the shelf life of both components remains 6 months from the production date.

## **6. Personal protection**

While performing the insulation protective personal equipment has to be used: clothing, gloves, protective goggles and masks. While spraying two-component products with a high-pressure machine all participating employees are obliged to wear respiratory masks with double filter.

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**DEW POINT TEMPERATURE AT RELATIVE AIR MOISTURE**

Air temperature	RELATIVE AIR HUMIDITY(%)											Temperature of air
	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	
2°C	-7,7	-6,6	-5,4	-4,4	-3,2	-2,5	-1,8	-1,0	-0,3	0,5	1,2	2°C
4°C	-6,1	-4,9	-3,7	-2,6	-1,8	0,9	-0,1	0,8	1,6	2,4	3,2	4°C
6°C	-4,5	-3,1	-2,1	-1,1	-0,1	0,8	1,9	2,7	3,6	4,5	5,4	6°C
8°C	-2,7	-1,6	-0,4	0,7	1,8	2,8	3,8	4,8	5,7	6,5	7,3	8°C
10°C	-1,3	0,0	1,3	2,5	3,7	4,8	5,8	6,8	7,7	8,5	9,3	10°C
12°C	0,4	1,8	3,2	4,5	5,6	6,7	7,8	8,7	9,6	10,5	11,3	12°C
14°C	2,2	3,8	5,1	6,4	7,6	8,7	9,70	10,7	11,6	12,6	13,4	14°C
15°C	3,1	4,7	6,1	7,4	8,5	9,6	10,7	11,7	12,6	13,5	14,4	15°C
16°C	4,1	5,6	7,0	8,3	9,5	10,6	11,7	12,7	13,6	14,6	15,5	16°C
17°C	5,0	6,5	7,9	9,2	10,4	11,5	12,5	13,6	14,5	15,6	16,2	17°C
18°C	5,9	7,4	8,8	10,1	11,3	12,4	13,5	14,6	15,4	16,3	17,3	18°C
19°C	6,8	8,3	9,8	11,1	12,3	13,4	14,5	15,5	16,4	17,4	18,2	19°C
20°C	7,7	9,3	10,7	12,0	13,2	14,4	15,5	16,5	17,4	18,4	19,2	20°C
21°C	8,6	10,2	11,6	12,9	14,2	15,4	16,4	17,4	18,4	19,3	20,2	21°C
22°C	9,5	11,2	12,5	13,9	15,2	16,3	17,4	18,4	19,4	20,3	21,2	22°C
23°C	10,4	12,0	13,5	14,9	16,0	17,3	18,4	19,4	20,4	21,3	22,2	23°C
24°C	11,3	12,9	14,4	15,7	17,1	18,2	19,2	20,3	21,4	22,3	23,2	24°C
25°C	12,2	13,8	15,4	16,7	18,0	19,1	20,2	21,6	22,8	23,3	24,2	25°C
26°C	13,2	14,8	16,3	17,7	18,9	20,1	21,3	22,3	23,3	24,3	25,2	26°C
27°C	14,1	15,7	17,2	18,6	19,8	21,1	22,2	23,3	24,3	25,2	26,1	27°C
28°C	15,0	16,6	18,1	19,4	20,9	22,1	23,2	24,3	25,3	26,2	27,2	28°C
29°C	15,9	17,6	19,0	20,5	21,8	23,0	24,2	25,2	26,2	27,3	28,2	29°C
30°C	16,8	18,4	20,0	21,4	23,7	23,9	25,1	26,1	27,2	28,2	29,1	30°C
32°C	18,6	20,3	21,9	23,3	24,7	25,8	27,1	28,2	29,2	30,2	31,2	32°C
34°C	20,4	22,2	23,8	25,2	26,5	27,85	28,9	30,1	31,2	32,1	33,1	34°C
36°C	22,2	24,1	25,5	27,0	28,4	29,7	30,9	32,0	33,0	34,2	35,1	36°C
38°C	24,0	25,7	27,4	28,9	30,3	31,6	32,8	34,0	35,0	36,1	37,0	38°C
40°C	25,8	27,7	29,2	30,8	32,2	33,5	34,7	35,9	37,0	38,1	39,1	40°C
45°C	30,3	32,2	33,9	35,4	36,9	38,2	39,5	40,7	41,9	43,0	44,0	45°C
50°C	34,8	36,6	34,5	40,1	41,6	43,0	44,3	45,6	46,8	47,9	49,0	50°C

From the table you can see at which surface temperature condensation occurs.

**\*Notes**

The data presented herein have been obtained during the system foaming in model conditions. When foaming in other conditions, the results obtained can be slightly different from published. Safety Data Sheet is available for the product. The system application instruction is available if requested. Polychem Systems company offers its assistance at the system implementation and application in client's manufacture.

**Every time the user is obliged to check the product and auxiliary agents usefulness for his intentional use.**

**The user is obligated to have a valid technical data sheet and safety data sheet of the product, which is provided by the manufacturer during the sale and every time on the customer's request.**

**Prior to processing the user must carefully read aforementioned documentation and follow the rules of procedure for product use.**