



TIBCHEMICALS

PROTEGOL® UR Coating 32-55 PN solvent-free two-component polyurethane coating

Description

PROTEGOL® UR Coating 32-55 PN is a two-component polyurethane coating. The product meets the requirements of ISO 21809-3:2020. Application is made by 2K airless hot spray system. PROTEGOL® UR Coating 32-55 PN has a high resistance against cathodic disbonding even at higher temperatures.

Uses

Coating of

- Field joints

Benefits

- Excellent corrosion protection
- High resistance against cathodic disbonding up to 95° C
- Abrasion-resistant and impact-resistant
- High temperature resistance
- Good adhesion to steel

Referenced Standards

ISO 21809-3:2020 Petroleum and natural gas industries - External coatings for buried or submerged pipelines used in pipeline transportation systems - Part 3: Field joint coatings.

Product data

The following data has been obtained at +23°C unless otherwise stated:

Type	polyurethane
Component A (Base)	polyol
Component B (Hardener)	isocyanate
Physical state	
Component A	viscous
Component B	liquid
Viscosity	
Comp. A at 50 °C	2000 mPa*s
Comp. B at 25 °C	200 mPa*s
Density (g/cm ³)	
Comp. A	1,58
Comp. B	1,24
Comp. A + B	1,48
Mixing ratio Comp A : Comp B	
Gravimetric	75:25
Volumetric	2,3:1,0

Coating properties

Recommended dry film thickness	≥1500 µm
<small>Actual required DFT may vary in certain applications, please contact us for technical clarification.</small>	
Service temperature	-30 °C to 95 °C
Short term temperature load without temperature gradient to the substrate	110 °C
Minimum surface temperature <small>min. +3°C above dew point</small>	10 °C
Processing temperature	
Component A	50 °C to 70 °C
Component B	20 °C to 40 °C
Max. rel air humidity	80 %

Potlife at 23 °C	210 sec
Potlife at 60 °C	30 sec

Coating properties according to DIN EN 10290:2002/10289:2002 (typical values)

Hardness Shore D (±5) according DIN EN ISO 686 (1 sec.)	75
Hardness Shore D (±5) according DIN EN ISO 686 (15 sec.)	80

Coating properties according to ISO 21809-3 (typical values)

Impact resistance (Annex D)	13 J/mm (23° C)
Impact resistance (Annex D)	7 J/mm (-5° C)
Indentation resistance	16% (80° C)
Indentation resistance	14% (95° C)
Cathodic disbondment (28 d)	3,5 mm (23° C)
Cathodic disbondment (28 d)	5,4 mm (80° C)
Cathodic disbondment (28 d)	6,9 mm (95° C)
Hardness Shore D (±5)	75 (15 sec)
Adhesion (ISO 4624, 23°C)	
Adhesion to pipe surface	12 MPa
Adhesion to plant coatings	18 MPa (PU)
Adhesion to plant coatings	12,8 MPa (3 LPE)

Adhesion after 28-d hot-water immersion at T _{max} (Annex I plus ISO 4624)	
Adhesion to pipe surface	8,1 MPa (80° C)
Adhesion to pipe surface	10,1 MPa (95 °C)
Adhesion to plant coatings	4,8 MPa (PU, 80° C)
Adhesion to plant coatings	7,4 MPa (3 LPE ,80

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°C)

Adhesion to plant coatings	12 MPa (3 LPE, 95 °C)
Specific electrical insulation resistance	2,6*10 ⁹ Ωm ²

Coating properties according to other standards (typical values)

Adhesion to FBE (internal test)	20,2 MPa
Adhesion to FBE (28-day hot water soak; internal test) (95° C)	18,4 MPa
Cleaning agent	Solvent B, G
Repair material	PROTEGOL® PU Repair, PROTEGOL® UR Coating 32-55 PN M/L, PROTEGOL® UR Coating 32-60 (Cartridge)

Colours

RAL 6029 - Mint green

Other colours on request (subject to technical feasibility and minimum order quantities)

Coverage, theoretical

Approx. 1,48 kg/m² at 1.000 µm DFT and not considering excess consumption.

Packing

Component A	Component B
barrel 300,00 kg	barrel 250,00 kg
hobbock 30,00 kg	hobbock 25,00 kg

Shipping and Storage Regulations, Application, Health and Safety

Storage:

In a cool and dry place shelf life is approx. 24 months in tightly closed original packs.

Maintenance of tools:

Immediately after use, all tools should be cleaned with Solvent B, G.

Solvent-free: The product does not contain any volatile organic ingredients (VOC) according to regulation 814.018 (VOCV) of Switzerland (Verordnung 814.018 über die Lenkungsabgabe auf flüchtigen organischen Verbindungen (VOCV))

Refer to our general work instructions for PROTEGOL® Coatings.

Refer to our safety data sheets prior to use.

Carefully read and follow all safety instructions on

labels and packaging. Handle and store material with care in accordance with the safety data sheets. Follow and observe any applicable local or national laws and regulations.

Regulations regarding explosion protection with regard to the construction and equipment of facilities (machines) can be found, among other sources, in the corresponding harmonized European standard (BS EN 16985:2018-12-14 "Spray booths for organic coating material - Safety requirements" (former DIN EN 12215 and DIN EN 13355)); furthermore, local laws and/or regulations must be observed.

Contact us to make sure you have the latest version of safety data sheet, technical data sheet and work instruction at hand.

Important Notice:

The information on the properties of the product components represent average values that correspond to our defined quality specifications. Our products are manufactured and controlled in accordance with strict quality management and quality control requirements, which are subject to ISO 9001: 2015 certification. Information on the default values defined by us are given in the acceptance test certificates. The product properties marked as "typical values" are taken from the test reports of external institutes, unless otherwise stated.

The information in our documents in printed or electronic form is based on our knowledge and experience. Due to numerous possible influences in the processing and application of our products, our statements do not release the processor from the responsibility to test the goods for their own procedures and purposes; Legally binding assurance of certain properties or suitability for a specific application cannot be derived from our information. It is the responsibility of the recipient of our products to observe any property rights as well as existing laws and regulations.

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