



Aliphatic one-component polyurethane resin

DESCRIPTION

Colodur is a performance polyurethane resin, aliphatic isocyanate-based, that cures upon reaction with atmospheric moisture, giving hard and flexible coatings with good abrasion, scratch, and weather resistance. Colodur is an excellent surface protection for use over aromatic polyurethane waterproofing membranes as UV protection. This product does not yellow on exposure to sunlight. Colodur can be delivered colourless or pigmented with standard colour. Colourless product can be pigmented on site by addition of suitable colour paste.

APPLICATION

- Protective UV topcoat for cold or hot-applied waterproofing membranes (pigmented version).
- Protection of outdoor wood surfaces
- Protecting topcoat of metal anticorrosion systems
- General outdoor use
- Clear resin can be used to create a clear waterproofing membrane, normally reinforced with a special fiberglass (Rayston Fiber 30, 30 grams/m²)

ADVANTAGES

- Clear, glossy, topcoat
- One-component product. Easy to apply
- Colour and UV stability.
- Abrasion and weathering resistance
- Fast curing
- Good hiding power

CERTIFICATIONS

- Applus independent laboratory:** Mechanical properties, artificial weathering, watertightness and water permeability. Certificate. N° 08/32307407, Abrasion: 08/32309984, 10/101.589-1432, Slip: 10/1709-1862.



- CE Marking:** EN 13813 SR-B2, 0-ARO0,5-IR14,7. DoP 20-210



- ETE 16/0148:** as protective topcoat of waterproofing membranes
- SRI index (Tecnalia Lab): **Sunlight reflectivity certification** (white colour)
- Giordano Bruno Laboratory: **Antiskid certification** (DIN 51130)

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

Chemical description	Solvent borne single-component aliphatic polyurethane
Physical state	Liquid
Packaging	Metal container 4 kg / 20 kg (colourless) 6 kg / 25 kg (pigmented)
Non-volatile content	>50% (colourless), >70% (pigmented)
Lead content	<1 mg/kg (pigmented)
Flash point	36° C (ASTM D 93)
Available colour	Colourless. Pigmented in white and grey. Other colours under request.
Density	Colourless: 0,95 g/cm ³ (20°C) Pigmented: 1,35 g/cm ³ (20°C)

Viscosity	Temperature	Viscosity (mPa.s)	
	(°C)	Colourless	Pigmented
	5	890	1000
	10	660	800
	20	410	600
	30	230	300

VOC (g/L and %)	VOC content:
VOC class as per 2004/42/EC	468,76 g/l (colourless) 380 g/l (pigmented) % VOC: 50
	Product subclass: i II Solvent based single-component performance products Limit from 01/01/2010: 500 g/l
Pot life	Colourless: 6 hours (1 kg, 20°C, 50% hr) Pigmented: 2 hours (forms skin on surface)
Storage	Keep below 35°C, away from ignition sources and moisture.
Use before	Colourless: 12 months Pigmented: 6 months

INFORMATION ON THE FINAL PRODUCT

Final state	Solid elastomeric membrane
Colour	Colourless. White and grey pigmented. Other colours under request.
Hardness (Shore)	53D (colourless) 60D (pigmented) (ISO 868)
Mechanical properties	Colourless: Elongation at break: 173% Tensile strength: 27.4 MPa Pigmented: Elongation at break: 70% Tensile strength: 15 MPa
Water vapour permeability	2.7 g/m ² day, (UNE EN ISO 7783)
Abrasion resistance	11 mg (taber, CS-10,1 kg)
UV resistance	UV resistant. Aliphatic polyurethanes are colour-stable, non-yellowing.
Slip resistance	With quartz sand spreaded onto (0,4-0,9 mm) at 1 kg/m ³ : Class 3 (UNE EN 12633-2003)
Thermal resistance	Stable between -40°C to 80°C
Solar reflectance	White colour: 84.7 % (ASTM E-903-12)
Thermal emittance	White colour: 0.82 (ASTM C1371-15)
Solar reflectance index, SRI (Convective Coefficient, Medium Wind)	White colour : 105 (ASTM E1980-11)





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CHEMICAL RESISTANCE

Permanent contact (0=worst, 5=best)

Chemical	Conditions	Result
Water	15d, 80°C	5
Salt water	5d, 80°C	5
Hydrochloric acid (200g/l)	7d, 80°C	0
Hydrochloric acid (20g/l)	7d, 80°C	3 (colour change)
Sodium hydroxide (40 g/l)	28d, 80°C	5
Sodium hydroxide (4 g/l)	28d, 80°C	3
Ammonia	28d, 80°C	4
Bleach	7d, 80°C	0
Bleach (10%)	7d, 80°C	0
Xylene	7d, 80°C	5
Isopropyl alcohol	7d, 80°C	3 (colour change)
Oil engine	28d, 80°C	5
Diesel	16d, 80°C	3 (colour change)

Superficial contact, non-pigmented Colodur (0=worst, 5=best)

Chemical	Conditions	Result
Hydrochloric acid (20%)	7 days	2
Acetic acid (6%)	24h	5
Skydrol	7 days	4
Diesel	1 day	5

SUPPORT REQUIREMENTS

To achieve a good penetration and bonding, support must be:

1. Flat and levelled (the product is self-leveling)
2. Compact and cohesive (pull off test must show a minimum resistance of 1,4 N/mm²).
3. Even and regular surface.
4. Free from cracks and fissures. If any, they must be previously repaired.
5. Clean and dry, free of dust, loose particles, oils, organic residues or laitance.

RECOMMENDED ENVIRONMENTAL CONDITIONS

Support temperature should be between 10°C and 30°C. At higher temperatures, specific precautionary measures must be taken. Please follow manufacturer advice. Support moisture should be less than 4%. Relative humidity of air should be less than 85%. High moisture conditions can lead to bubble formation under the membrane surface.

PREPARATION

It is necessary to prepare all critical spots. Consult application documents provided by Krypton Chemical. For all application on waterproofing membranes (Impermax, Impermax 2k, Impermax Polyurea H, Polyurea) re-apply Colodur following the relevant reapplication guidelines.

MIXING

If necessary, dilute with up to 10% Solvent Rayston for viscosity adjustment. Note: on non-porous substrates, do not dilute the first coat. Stir gently before use. Use low speed stirring equipment to minimize air bubbles.

APPLICATION

Apply by roller, brush or airless spraying equipment. Spray application of clear product is not recommended due to the risk of micro bubbling. Although not strictly necessary, it is highly recommended use all the contents. If not, ensure total sealing of the remainder. **Note:** some roller materials are damaged by the solvent. If in doubt, it is recommended to test before use.

For airless spraying equipment, viscosity is likely to need adjustment. Excess pressure, along with high temperature and humidity, may give rise to micro bubbles that makes the surface to look hazy. For pigmented applications, mix the pigment paste with Colodur by means of a low-speed stirrer and wait some minutes to allow bubbles to disappear. Apply the pigmented colour normally. It is recommended to use all the pigmented mixture. Apply, as a rule, to 200-500 g/m².

CURING TIME

As Colodur is a moisture-cured polyurethane, curing time varies considerably with environmental conditions and wet film thickness. By increasing the temperature and/or relative humidity of the environment and in the presence of direct sun, the curing time is considerably reduced. As the layer thickness increases, the curing time also increases. Below are some guideline values at 20°C and 50% relative humidity (Clear Colodur).

Wet film thickness	Touch dry (h)
100 microns	1
250 microns	2
500 microns	3

REAPPLICATION

A second coat of Colodur can be applied when the first one is no longer sticky. Do not wait more than 24 hours for the next coat application to ensure good intercoat adhesion.

RETURN TO SERVICE

At usual conditions (25°C, 50% rh) the membrane can be walked on (light traffic) in 24-48 hours. Depending on final use, it is recommended to wait 7-10 days for usual traffic. Final hardness development may take up to 15 days.

TOOL CLEANING

Liquid Colodur can be cleaned with Rayston Solvent, acetone, and alcohols. Once hardened, it cannot be dissolved.

FAQS

Problem	Question	Cause	Solution
Does not cure	Suitable solvent?	Some thinning solvents are not suitable	Apply a second coat using only Rayston Solvent as a diluant
	Porous support?	No primer?	Seal with an epoxy-typ primer before Colodur
Bubbles	Airless	High pressure	Lower pressure or apply thinner coats. Ambiental conditions may be adverse for this application method.
			Mix well
Not enough opacity	Horizontal?	Not enough pigment	Mix well
	Curing rate can be slower?		Solvent Rayston can be useful



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CLEANING AND MAINTENANCE

It may be necessary to reapply Colodur layers if they are worn out due to traffic, weather, corrosion, etc. For stain removal, a surface treatment with Rayston solvent or isopropyl alcohol may be attempted. Strong acids are totally inadequate. Some solvents may damage the membrane. If this happens, the affected area must be cut and repaired with a new Colodur application. A final treatment and periodic maintenance with protective wax is suggested. Contact Krypton Chemical or Flooring Application manual for details.

SAFETY

Colodur contains isocyanates and flammable solvents. Always follow the instructions provided in the material safety data sheet and take the precaution described there. As a rule, suitable ventilation must be ensured, and all ignition sources must be avoided. This product is intended to be used only for the uses and in the way here described. This product is to be used only by industrial or professional users. It is not suitable for DIY-type uses.

ENVIRONMENTAL PRECAUTIONS

Empty containers must be handled taking the same precautions as if they were full. Containers must be considered as hazardous waste, to be transferred to an authorized waste manager. If there is some residual product in the containers, do not mix it with other substances without checking for possible dangerous reactions.

OTHER INFORMATION

The information contained in this DATA SHEET, as well as our advice, both written as verbal or provided through testing, are based on our experience, and they do not constitute any product guarantee for the installer, who must consider them as simple information.

We recommend to study deeply all information provided before proceeding to the use or application of any of our products, and strongly advise to conduct tests "on-site" to determine their convenience for a specific project.

Our recommendations do not exempt of the obligation of installers to deeply study the right application method for these systems before use, as well as to conduct as many preliminary tests as possible should any doubt arise. The application, use and processing of our products are beyond our control, and therefore under the exclusive responsibility of the installer. In consequence, the installer will be the only responsible of any damage derived from the partial or total in-observation of our indications, and in general, of the inappropriate use or application of these materials.

This Data Sheet supersedes previous versions.