RAYSTON SPRAY P3030

Pure polyurea membrane

DESCRIPTION

Rayston Spray P3030 fast is a 2-component polyurea system for elastic membrane application with crack-bridging capability. It is an extra fast-curing system that can only be applied by hot mechanical spraying equipment.

PROPERTIES

- Crack-bridging capability. Highly elastic membrane.
- Very fast curing, using two-component spraying equipment.
- It can be pigmented.

CERTIFICATIONS

Applus (Independent laboratory):

- Low-temperature foldability: 11/2855-1313
- Mechanical properties: 11/2855-1314
- Contact with fuel products (UNE 48307:2011) Exp 13/6620-457

AITEX (Independent laboratory):

- Mechanical properties EN ISO 527-1/3.
- Tear, according to UNE-EN ISO 34-1:2011

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

	Component A	Component B
Chemical description	Polyamine	Aromatic isocyanate prepolymer
Physical state	Liquid	Liquid
Packaging **Note:** Pigment is delivered in a third container. See Pigment Spray data sheet for specific details.	Metal container 185 kg 23.1 kg	Metal container 211 kg 26.3 kg
Non-volatile content	100%	100%
Flash point	>100ºC	>100ºC
Colour	Yellow (without pigment)	Yellow

Density	Temperature (ºC)	Density (g/cm³)	Temperature (ºC)	Density (g/cm³)
	25	1.02	25	1.12

Viscosity	Temperature (ºC)	Viscosity (mPa.s)	Temperature (ºC)	Viscosity (mPa.s)
	25	600	25	2000

A/B mixing ratio	A=1, B=1,17 by weight A=1, B=1 by volume
Density and viscosity of the mixture	Fast polymerization (see pot life data)
Colour	Dark yellow, but component A is pigmented by addition of pigment paste (Pigment Spray) delivered with each kit of Rayston Spray P3030.
Curing performance	Gel time mixture A+B (20 g) 4 s at 25ºC 3 s at 60ºC Tack free time 30 s at 70ºC
Storage	Keep between 10ºC and 30ºC
Use before	12 months after manufacturing date.

INFORMATION ON THE FINAL PRODUCT

Final state	Elastomeric solid membrane
Colour	Available colours: light grey, dark grey, rust red, blue (may darken during storage and exposure to sunlight). Other colours under request.
Gloss (60º)	80-85%
Hardness (Shore)	87A, 35D (ISO 868)
Mechanical properties	Maximum elongation: 324% Tensile strenght: 16,2 MPa (UNE EN ISO 527-1/3) Tear strength 61.8 N/mm (UNE EN ISO 527-1/3)
Tear strength	69 N/mm (ISO 34-1, method B)
UV resistance	Rayston Spray P3030 is an aromatic isocyanate-based product. A colour change is to be expected under sunlight. This change does not affect its mechanical properties. An additional UV protection can be provided with an Impertrans/Colodur topcoat.
Abrasion resistance	10 mg (Taber, 1000 c. CS-10, 1kg)
Thermal resistance	Stable up to 200ºC (6-hour test). According to low temperature tests, (UNE_EN 495-2001), the membrane can be folded at -45ºC without cracking or breaks.
Chemical resistance	Immersion test (0=not recommended, 5=best)

Chemical	Conditions	Result
Water	15d, 80ºC	5
Salt water (saturation)	15d, 80ºC	5
Xylene	7d, 80ºC	2
Ethyl acetate	7d, 80ºC	1
Isopropyl alcohol	7d, 80ºC	0
Sodium hydroxide (50%)	7d, 80ºC	5
Hydrogen peroxide (33%)	7d, 25ºC	4
Sulphuric acid (10%)	7d, 80ºC	5
Sulphuric acid (30%)	30d, 80ºC	4
Phosphoric acid (54%)	7d, 80ºC	4
Bleach	7d, 80ºC	4
Ammonia (3%)	7d, 80ºC	5
Diesel	16d, 80ºC	5
Hydrochloric acid 12M (37%)	7d, 80ºC	0
Hydrochloric acid 6M (18%)	7d, 80ºC	1
Hydrochloric acid 3M (9%)	7d, 80ºC	4
Hydrochloric acid 0.75M (2%)	7d, 80ºC	5
Sodium hypochlorite 15%	7d, 80ºC 21d, 80ºC	4
Engine oil	7d, 80ºC	5
Crude petroleum	21d, 23ºC	5
Sulfamic acid 85%	7d, 80ºC	4
Oleic acid	7d, 80ºC	0
Glycerin	7d, 80ºC	5
Ethanol/water 20/80 w/w	7d, 80ºC	4

Adhesion strength	Surface	Adhesion strength (MPa)
	Concrete (with epoxy	4.0

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	primer)	
	Plywood (with epoxy primer)	1.6 (cohesive wood failure)
	Steel (PU primer)	5.3
	High density PU foam (150kg/m3)	>1.5 foam failure

SUPPORT REQUIREMENTS

To achieve a good penetration and bonding, support must be:
1. Compact and cohesive (pull off test must show a minimum resistance of 1,4 N/mm^2).
2. Even and regular surface.
3. Free from cracks and fissures. If any, they must be previously repaired.
4. Clean and dry, free of dust, loose particles, oils, organic residues, or laitance

Support temperature must be between 10ºC and 40ºC. Support moisture must be less than 4%.

SUPPORT PREPARATION

Eliminate all dust and loose particles from the substrate by brushing or vacuum cleaning.

MIXING

Stir and homogenise separately both components using suitable mixing equipment before being loaded into the machine. Add the required Pigment Spray to the A-component and stir before loading. Recirculate both components while heating up to the required application temperatures.

APPLICATION AND RECOMMENDED QUANTITIES

Rayston Spray P3030 must be applied using 2-component hot spraying equipment.

Recommended temperatures are:

- Component A: 55-65ºC
- Component B: 65-70ºC

Pressure must be adjusted to 140 bar.

During spraying, check coating thickness to ensure curing evolution is correct.

Rayston Spray P3030 is applied at 1,5-2,0 kg/m2, obtaining a 1,5-2 mm thickness.

Please contact Krypton Chemical for specific application details.

CURING TIME

Rayston Spray P3030 cures to touch after a few minutes after application.

Approximate hardness values are provided here as reference only (1 mm, polypropylene support, 25ºC 50% RH)

Time	Hardness (Shore A)
5 min	28
10min	40
20 min	55
1 hr	70
24 hrs	80
4 days	88

RECOATING

It is recommended to obtain the right thickness with a single application. Where an epoxy primer has been previously applied, spray Rayston Spray P3030 Fast only after the primer is fully cured.

RETURN TO SERVICE

Under most conditions (25ºC, 50% rh), the membrane is resistant to light use after 10 minutes.

TOOL CLEANING

To keep equipment in good conditions (spraying gun, gaskets), it is recommended not to use solvents. A cleaning fluid like Rayston Fluid can be used instead. Component B must be thoroughly removed and replaced with this fluid.

FAQ

Problem	Question	Answer	Solution
Does not cure or remains sticky	Ratio AB correct?	Different pressure	Check and correct pumping equipment
Bubbles or open holes in the membrane	Porous substrate?	No primer	Apply an Epoxy-type primer before Polyurea Open holes are frequent with fast-curing polyurea
Not enough hiding power	Horizontal?	Too few No pigment	Use 1 kg/m2 minimum Mix and homogeneize pigment in component A before spraying
Gray colour darkens upon exposure to sun	Exposed?	Components react with UV light.	Apply an aliphatic topcoat afterwards

SAFETY

Component B of Rayston Spray P3030 contains isocyanates and Component A contains corrosive polyamines that can cause burns. Always follow the safety instructions in the Material Safety Data Sheet. As a rule, a good ventilation, protective clothing and respiratory protection is needed (combined organic vapor filters + particles A2P). This product must be used only for the applications here described. This product is intended for industrial and professional use. It is not suitable for DIY-type applications.

ENVIRONMENTAL PRECAUTIONS

Empty containers must be handled with the same precautions as if they were full. Treat empty containers as hazardous waste and transfer them to an authorized waste manager. If the contains still have some material left, do not mix with other product with no knowledge of potentially dangerous reactions. Component A and B may be mixed on a 1/1 ratio to get an inert material, but never do it in volumes larger than 5 litres to prevent a dangerous heat evolution.

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.

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