



PRODUCT DATA SHEET

UrePac® Spraycast 10 170

System Description

UrePac® Spraycast 10 170 is a two component, hybrid polyurethane/urea elastomer comprising of a polyether polyol, amine cross-linker and MDI based isocyanate. The system has been developed with a fast cure and balanced viscosities for processing through a high pressure, plural component spray machine such as a Graco EXP2.

Product Description and Features.

The system has been developed for optimal flow giving a superior surface texture as a high performance hard coat for protective and aesthetic applications.

- 100% Solids, Zero VOC.
- Fast Reactivity
- Low viscosity

Polyol (UrePac Spraycast 10 170) Specification:

Specific Gravity (22°C):	1.04 +- 0.02 g/ml
Viscosity (Brookfield) (22°C):	400 +- 200 m.Pas
<i>Spindle 2 Speed 50</i>	
Appearance:	Clear amber liquid

Isocyanate (UrePac 2333) Specification:

Specific Gravity (22°C):	1.17 +- 0.01 g/ml
Viscosity (Brookfield) (22°C):	600 +- 100 m.Pas
<i>Spindle 3 Speed 100</i>	
Appearance:	Clear Brown liquid

Mixed System Specification

Mix Ratio:	By Weight	100 Polyol (Part A): 110 Isocyanate (Part B)
	By Volume	100 Polyol (Part A): 100 Isocyanate (Part B)

Gel Time (22°C): 10+-2 seconds

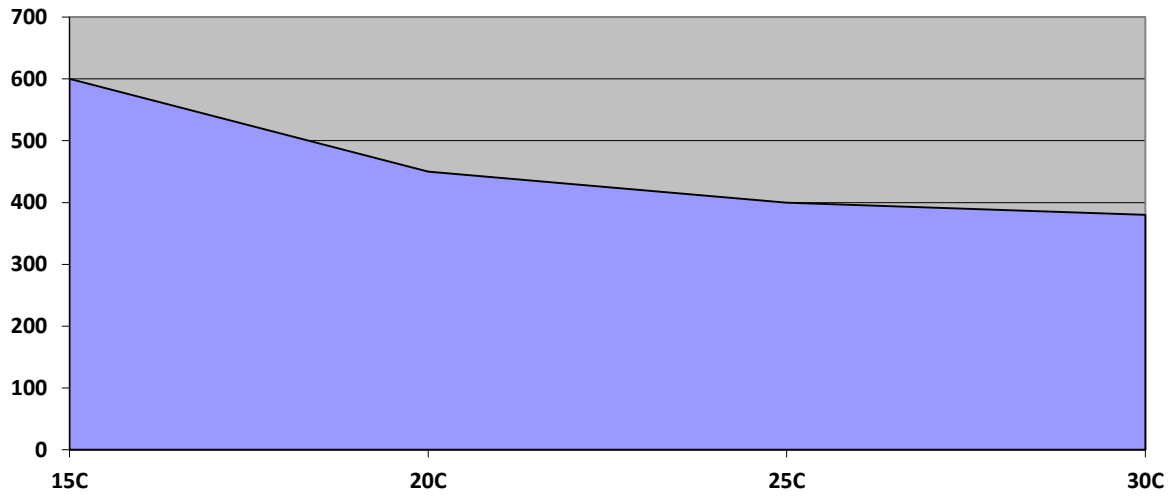
Time from when mixing commences till the liquid forms a solid.

Cure time (22°C): 180+-60 seconds

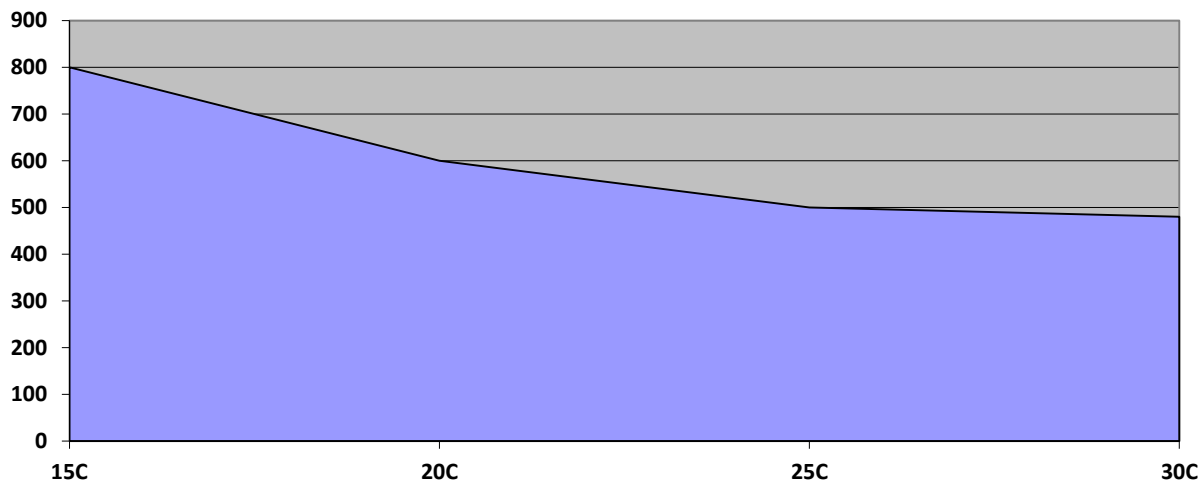
(Obtained from Laboratory 100g cup mix, results will vary depending on mix quantities)

Viscosity vs. Temperature

Polyol



Isocyanate



Packaging Options:

Packaging	Component A (Polyol)	Component B (Isocyanate)
23L White Open top pail	20kg	22kg
60L Open Top Drum	60kg	66kg
205L Closed Head Drum	200kg	230kg
1000L IBC	1000kg	1100kg

Typical Cured Coating Properties

After 7 days cure @ 22°C unless otherwise specified.

Hardness (22°C)	ASTM D2240	70+-5 Shore D
Solid Density (22°C):		1.10 g/ml
Tensile Strength:	ASTM D412	22+-2 MPa
Elongation:	ASTM D412	110+-5%
100% Modulus	ASTM D412	18+-1 MPa
300% Modulus	ASTM D412	N/A
Taber Abrasion:	ASTM D4060	220 mg loss
<i>H22 Wheel 1kg per 1000 cycles</i>		
Water Absorption (22°C):	ASTM D471	Less than 1% @ 24 hours
Service Temperature:		-20°C to 80°C

Storage

Component A should be stored in closed containers under dry conditions out of direct sunlight between 18 and 25°C.

Component B should be stored separately from *Component A*, but under the same conditions.

Both products will have a minimum shelf life of six months when stored under these conditions.

Cured Product: Like all polyurethanes/polyureas based on aromatic isocyanates this elastomer is **not** UV stable and will have surface discolouration and degradation if exposed to UV radiation and sunlight. Please speak to our technical consultants regarding your options if this product is required for use in external applications.

Typical Chemical Resistance Chart

3 Suitable for long term use

2 Suitable for Short to Medium term exposure

1 Very short term exposure (i.e. will withstand spills that are cleaned off within an hour)

0 Not suitable to any exposure

Chemical	Result @ 22°C	Chemical	Result @ 22°C
Acetic Acid	1	Acetone	1
Ammonium Hydroxide (50%)	1	Benzene	1
Brine Saturated H ₂ O	3	Chlorinated Water	3
Diesel Fuel	3	Petroleum	3
Petroleum/10% Ethanol	3	Hydrochloric Acid (37%)	2
Hydrofluoric Acid (10%)	2	Hydraulic Oil	3
Isopropyl alcohol	3	Lactic Acid	2
MEK	1	Methanol	3
Methylene Chloride	1	Mineral Spirits	2
Motor Oil	3	Nitric Acid (50%)	0
Phosphoric Acid (10%)	3	Phosphoric Acid (50%)	2
Potassium Hydroxide (10%)	3	Potassium Hydroxide (20%)	3 (Discolouration)
Propylene Carbonate	2	Sodium Hydroxide (25%)	1
Sodium Hydroxide (50%)	0	Sodium Hypochlorite (10%)	3
Sodium Bicarbonate	3	Stearic Acid	1
Sugar/H ₂ O	3	Sulphuric Acid (10%)	1
Sulphuric Acid (50%)	0	Toluene	3
1,1,1 Trichloroethane	1	Trisodium Phosphate	3
H ₂ O	3	Vinegar/H ₂ O (5%)	3
Xylene	2	H ₂ O (14 Days @70°C)	3

Component Preparation

Component A (polyol) should be thoroughly mixed each day prior to use as the components can separate out overnight. If this component is held in day tanks they should be continuously agitated to prevent any separation during production.

Component B (isocyanate) does not need to be mixed prior to use.

Both Components are usually heated through the dispensing machine, but if possible they should be preconditioned to 22-25°C to ensure that the components will have consistent reactivity and performance.

Surface Preparation

All surfaces should be thoroughly cleaned of all oils, fats and solvents. It is also critical that the surface is completely dry to prevent any “pin-holing” or blistering in the cured membrane. The surface should also be heated to at least 15°C to ensure that full cure of the sprayed elastomer is achieved.

Steel

Steel and cast iron require an abrasive grit blast to a near white metal (SSPC-SP10) and then apply a suitable polyurethane primer. Please contact a technical consultant if you need to discuss suitable primers for your application.

Concrete

Concrete also requires an abrasive grit blast to SSPC-SP13 and then apply a suitable polyurethane primer. Please contact a technical consultant if you need to discuss suitable primers for your application.

Processing

Mix Ratio – It is absolutely essential that the mix ratio of the two components is accurately maintained to within 1% of the specified value. This ensures that the chemical reaction will proceed to completion and that the optimum physical properties are achieved. Please ensure that the spray gun and line filters are thoroughly maintained to the manufacturers standards to prevent blockages in the spray tips.

High Pressure Machines – High pressure machines rely on high pressure impingement mixing of the two components in the spray gun. We recommend the following settings as a starting point:

- Set the component temperatures to 60-70°C
- Set the hose temperatures to at least 60°C
- The pressure on each component should be set at least 2000psi as a starting point and then vary the pressures to suit individual processes and requirements.
- Typical coating thickness of 0.5-1mm are easily achieved per pass.
- Allow approximately 30-60 seconds between each pass to get the best adhesion.

If there is a “sticky” spot of material in the cured elastomer then this is most likely cause by a “lead” or “lag”. This is when one of the two components is dispensed slightly before the other and remains un-reacted. It generally requires the pressures of the two components to be more balanced, or the spray tip to be thoroughly cleaned.

Demould

If this material is sprayed into a mould we recommend pre treating with a silicone based release agent. The elastomer can be quickly built up in a few passes and the part can be easily demoulded within 5-10minutes.

Clean Up

It is essential that any liquid spills are cleaned up immediately, as the isocyanate (which reacts with atmospheric moisture) and reacting urethane is very difficult to remove once it has fully cured. For liquid spills we recommend using UrePac+7102 which is a non flammable, quick drying solvent. For cleaning of cured urethane from small utensils we recommend using UrePac+ 7108 heated to 70°C in a deep fryer for 1-2 hours.

Safety Requirements:

PPSE



We recommend the use of eye protection and latex or nitrile gloves when processing any polyurethane systems. We would also recommend the use of disposable overalls as splashing of the isocyanate can cause temporary staining of the skin, and some individuals can become sensitized to isocyanates with skin contact. As the isocyanate is heated and dispensed as an aerosol into the atmosphere then an air fed respirator with organic vapour filter is recommended when spraying elastomers. It is also critical that the area is cleared of non protected personnel to prevent inhalation of isocyanate vapours.

Transport (Dangerous Goods) Classification

Component A: None

Component B: None

Isocyanates

Classified as Hazardous according to Worksafe Australia

HARMFUL VAPOUR

SKIN AND EYE IRRITANT

SKIN AND RESPIRATORY SENSITISER

FIRST AID

If inhaled: remove from exposure. For all but the most minor symptoms arrange for a doctor or transport to the nearest hospital.

In case of eye contact: immediately flush eyes with plenty of water for at least 15 minutes. Contact medical attention.

In case of skin contact: immediately wash skin with soap and plenty of water. Get medical attention immediately if symptoms occur. Remove contaminated clothing Wash clothes before re-use.

Other information: Never give fluids or induce vomiting

Advice to Doctor: May cause respiratory sensitisation or asthma-like symptoms. Bronchodilators, expectorants and anti-tussives may be of help. Respiratory Symptoms, including pulmonary oedema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. No specific antidote. Treatment based on judgement of the physician in response to reactions of the patient.

WATER CONTAMINATION CAUSES DANGEROUS PRESSURE

Store in a DRY place. The combined evolution of CO₂ and heat can produce sufficient pressure to rupture a closed container.

IN CASE OF FIRE: use CO₂, dry chemical or foam extinguishers. If water is used it should be in very LARGE quantity. The reaction between water and hot isocyanate may be vigorous. Wear a positive pressure self-contained breathing apparatus.

IN CASE OF SPILL OR LEAK: evacuate and ventilate spill area. Do not use water. Dyke to prevent entry into waterways. If temporary control of isocyanate vapour is required, a blanket of foam may be placed over the spill. Use appropriate safety equipment including respiratory protection during clean up. Soak up with sawdust or other absorbent. Shovel into suitable open-top containers. Do not make pressure tight.

Remove from the area for decontamination. Use a solution of 3-8% ammonia in water or 5-10% sodium carbonate at about a 10 to 1 ratio to isocyanate. Detergent may be added to facilitate wetting of ammonia solution. Let stand 1-2 days before disposal in approved manner.

EMERGENCY RESPONSE (All Hours)

1800 033 882 (Australia Only)

Disposal

Liquid Systems: Liquid polyurethanes should be disposed of with an EPA approved industrial waste company which meet all applicable federal, state and local laws and regulations.

Cured Urethanes: Fully reacted and cured polyurethanes are inert and can be disposed of as normal landfill.

Container: Dispose of decontaminated drums in accordance with all applicable federal, state and local laws and regulations.

Do Not Re-use Empty Container.

Do Not Cut or Weld Empty Container.

Disclaimer

This information is given in good faith but without warranty and is supplied to users based on our general experience and, where applicable, on the results of tests on samples of typical manufacture.

However, because of the many factors which are outside our knowledge and control that can affect the use of these products, it is imperative that the end user is satisfied that the material will meet their individual processing and performance requirements. Pacific Urethanes Pty Ltd cannot accept liability for any injury, loss or damage resulting from reliance upon this information.

All sales of this product shall be subject to Pacific Urethanes' Terms and Conditions of Sale. For a copy of these terms please contact us at info@pacificurethanes.com.

For additional information, consult the Material Safety Data Sheet for this product.