

Urochem 211

TWO-PART HIGH CHEMICAL RESISTANT POLYURETHANE JOINT SEALANT

DESCRIPTION

Urochem 211 is a two-component sealing compound based on a hydrophobic polyurethane resin and an isocyanate curing agent. The system crosslinks to produce a tough, durable rubber like seal. Its unique chemistry ensures that it is unaffected by high concentrations of acids, alkalis, and water-soluble salts.

PRODUCT APPLICATION

Typical applications include its use in both vertical and horizontal joints in bonded areas designed to contain chemical spills, sewerage treatment plants, sumps, laboratories, and chemical manufacturing plants.

SURFACE PREPARATION

The correct preparation of the joint faces is absolutely essential to the satisfactory performance of the sealant. All surfaces should be clean, sound, and dry, and laitance or surface contamination should be removed by thorough wire brushing, grinding or grit blasting. Vacuum or blow with compressed air to ensure thorough removal of dust. Metal surfaces should be free of mill-scale and rust and mild steel treated with a suitable anticorrosive primer.

PRIMING

Priming: For porous or friable surfaces, where severe conditions are expected, or continuous immersion is anticipated use **Urochem 101** or **Urochem 106 Epoxy Primer**. Mix base and activator thoroughly and apply the mixed material with a brush to the joint faces ensuring complete coverage. Particular attention should be paid to any voids and hollows. Allow at least 30 min. for the solvent to evaporate before applying the sealant. After approximately 3 hours or once the primer has lost its tack, re-priming is required. Protect the primed surface from dust and dirt which could coat it and interfere with the adhesion of the sealant.

BOND BREAKER

To ensure proper movement of the joint a bond breaker must be used at the base of the joint. Where a backing material such as polyethylene foam rod is used to ensure the correct joint geometry a bond breaking tape is not required. For water retaining structures care must be taken to comply with design requirements.



Urochem Trading (Pty) Ltd

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MIXING

- **Urochem 211** is supplied in a two-part kit, base, and activator in separate tins.
- Transfer the total quantity of activator into the base component and mix thoroughly using a slow speed electric drill fitted with a flat blade stirrer.
- Scrape down the sides of the can and the base and remix until the colour is uniform and free from streaks.
- Thorough mixing is essential and should take 5 to 10 minutes.

APPLICATION

- Fill the sealant into a closed barrel gun using a follower plate or small trowel. Gun into the joint using a continuous squeezing of the trigger to ensure a smooth continuous flow of material.
- Fill the joint from the bottom up and ensure that there is contact between the sealant and joint surfaces.
- To ensure contact of the sealant with the walls of the joint, the sealant should be tooled to a smooth finish using a rounded spatula. A soapy solution may be used to aid the process. Remove any masking tape applied before cure has commenced.

JOINT DESIGN

- The recommended minimum joint dimension is 6 x 6mm, but where possible we recommend a 10 x 10mm joint.
- For joints ranging from 6mm to 10mm wide, we recommend a width to depth ratio of 1:1, for anything wider a 2:1 width to depth ratio should be maintained.
- In water retaining structures a 1:1 ratio should be maintained due to Hydrostatic pressure and cyclic movement.
- These ratios provide the optimum geometry to allow movement to occur within the joint without placing excessive force on the joint faces.
- Joint faces should be parallel, and the joint width should be at least four times the anticipated movement.
- When placing the sealant, the joint opening should if possible be central to its maximum compression/expansion cycle.

CLEANING

Clean all tools and equipment with **Urochem 901** before setting of the sealant has taken place.

SAFETY

Contact with skin should be avoided by wearing gloves and protective clothing. In case of eye contact wash well and obtain medical advice.



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TYPICAL PROPERTIES – AS PER UROCHEM QC

The below properties are based on in-house testing methodologies.

Mixing Ratio	Two component – mix as supplied – Do not part mix
Pot Life	20 Min @ 25°C
Tac free	1 Day
Full Cure	7 Days
Colour	Grey – Other colours available
Density	1,49 g/cm ³
Hardness	± 35 – 40 Shore A
Movement Accommodation	15%
Theoretical coverage	See Material Estimating Guide below
Chemical resistance	Most acids, alkalis & salts
Shelf Life	9 Months
Application Temp.	5 to 35°C
Service Temp.	-25 to 90°C
Pack Size	2 Lt Kits
Cleaning	Urochem 901
Storage	Store in a cool dry well ventilated place away from heat & sunlight

MATERIAL USAGE ESTIMATING GUIDE

(No allowance made for wastage)

		Joint width in mm									
		6	8	10	12	15	20	25	30	35	40
Joint depth in mm	6	27	20,8	16,6	13,8						
	8		15,6	12,5	10,42	8,3					
	10			10	8,3	6,6	5				
	12				6,9	5,5	4,2	3,3			
	15					4,4	3,3	2,6	2,2		
	20						2,5	2	1,6	1,4	1,2
	25							1,6	1,3	1,1	1
	30								1,1	0,9	0,8
	35									0,8	0,7
	40										0,6
Lm per Litre, excluding wastage											



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CHEMICAL RESISTANCE CHART

Rating System	A - Little or minor effect B - Minor to moderate effect - Spill and splash only U - Unstable
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Test Method	8 weeks immersion. Please consult our technical department on your exact requirements as conditions of use can affect the results obtained
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Chemical	% Conc	Temp in °C	Rating
ACIDS			
HCL	20%	25	A
	30%	70	U
H2SO4	20%	25	A
		70	B
	50%	25	A
		70	B
	70%	25	U
HNO3	30%	25	B
		70	U
PEROXIDE			
	50%	25	A
		70	B
	Conc	25	B
		70	U

CHEMICAL COMPATIBILITY CHART

Chemical	% Conc
Acetic Acid	10%
Acetic Acid	25%
Ammonium Hydroxide Solution	0,88%
Ammonium Nitrate	50%
Ammonium Sulfate Solution	50%
Boric Acid Solution	saturated
Chromic Acid	10%
Citric Acid	20%
Formic Acid	40%
Hydrochloric Acid	conc
Lactic Acid	25%
Maleic Acid	30%
Nitric Acid	30%
Nitric Acid	70%
Phosphoric Acid	50%
Phosphoric Acid	90%
Sodium Hypochlorite	
Sodium hydroxide	30%
Sodium hydroxide	50%
Sugar solution	saturated
Sulphuric Acid	30%
Sulphuric Acid	70%
UREA	30%

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