

TECHNICAL DATA SHEET

UREPAC[®] CRYO 45 48

PRODUCT DESCRIPTION

UrePac™ Rigid 45 48 is a two component pour/ injection PUR / PIR foam based on polyether / polyester polyols and MDI isocyanate. The system has been developed for the insulation of valves and pipe work for low boiling liquids such as LNG, LPG and Ammonia.

UrePac™ 45 48 has a low viscosity and long cream time so that it can be dispensed through low and high pressure equipment or hand mixed.

UrePac™ 45 48 has been formulated using non-halogen containing fire retardants, zero ODP blowing agents, no CFC or HCFC, it can be used over a broad range of application conditions including areas of high relative humidity and high ambient temperature.

UrePac™ 45 48 can also be formulated using blowing agents that have zero ODP and a very low GWP, where low GWP is specified.

PRODUCT FEATURES

The system has been developed with excellent insulation and fast reaction properties for use in hot water or refrigeration applications.

- Exceptional insulation for cryogenic applications
- 1:1 (v/v) Mix ratio
- Excellent flow
- Excellent fire performance



UREPAC CRYO 45 48 POLYOL SPECIFICATION

Appearance:	Clear straw liquid
Specific Gravity (22°C):	1.10 ± 0.02 g/mL
Viscosity (Brookfield) (22°C):	300 ± 100 mPa.s

Spindle 1 Speed 50

UREPAC ISO2001 MDI ISOCYANATE SPECIFICATION

Appearance:	Clear brown liquid
Specific Gravity (22°C):	1.23 ± 0.02 g/mL
Viscosity (Brookfield) (22°C):	210 ± 70 mPa.s

Spindle 1 Speed 50

PACKAGING OPTIONS

Packaging	UrePac Cryo 45 48 Polyol	UrePac ISO2001 MDI Isocyanate
205L Closed Head Drum	220kg	250kg
1000L IBC	1100kg	1250kg



MIXED SYSTEM SPECIFICATION

Mix Ratio:	By Weight	100 Polyol : 110 Isocyanate
	By Volume	100 Polyol : 100 Isocyanate

Test	Specification	Units
Cream Time (22°C): <i>Time from when mixing commences till the liquid starts to expand.</i>	45 ± 3	seconds
String time (22°C): <i>Time from when mixing commences till "strings can be pulled from the surface of the rising foam.</i>	170 ± 10	seconds
Rise time (22°C): <i>Time from when mixing commences till the foam finishes expanding.</i>	240 ± 20	seconds
Free Rise Density (22°C):	48.0 ± 2	kg/m ³

(Obtained from Laboratory 66g cup test, results will vary depending on mix quantities)

TYPICAL CURED FOAM PROPERTIES

Test	Method	Specification
Core Density: (Machine Dispensed)	ASTM D1622	48 ± 3 kg/m ³
Dimensional Stability (70°C)	+/-1% Volume (@ 72 hours)	Pass
(-10°C)		Pass
*Closed Cell Content:	ASTM D6226	99.0%
K Value: Initial	ASTM C518	0.0195 W/mK
180 day aged		0.0230 W/mK
Tensile Strength (22°C)	ASTM D1623	0.58 MPa
(-165°C)		0.65 MPa
Compressive Strength: (22°C)	ASTM D1621	330 kPa
(-165°C)		625 kPa



Water Absorption	ASTM D2842	1.35%
Horizontal Burn	ISO 3582	
Burn Time:		5 sec
Burn Length:		15 mm
Burn Rate:		0.23 mm/sec
Leachable Halide	ASTM C871	25 ppm
Spread of Flame	ASTM E84	25-50

STORAGE

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

ISOCYANATE should be stored separately from polyol, 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 based on aromatic isocyanates this foam 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.



PROCESSING CONDITIONS

All processing conditions are given as a guide only, it is the responsibility of the customer to satisfy themselves that the product is suitable for their requirements by running closely monitored trials prior to production.

COMPONENT PREPARATION

POLYOL should be mixed each day prior to use as the components can separate out over time. If this component is held in day tanks they should be continuously agitated to prevent any separation during production.

ISOCYANATE does not need to be mixed prior to use.

MACHINE SETTINGS

Tested with a Graco E30

Both primary and hose heaters should be set at 30-40°C with a minimum of 1200psi dynamic pressures to ensure that the components will have consistent reactivity and performance as well as maximum injection time.

INJECTION SETTINGS

Substrate should be clean, dry and free of any oil or grease. The substrate temperature should be a minimum of 18°C. When carrying out multiple injections, subsequent shots should ideally be carried out after end of rise, prior to tack free time, of the previous foam injection.

DISPOSAL

Liquid Systems: Liquid polyol or isocyanates 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 regular 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.

WATER CONTAMINATION CAN CAUSES DANGEROUS PRESSURE BUILD UP IN ISOCYANATE DRUMS



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.

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