



FOUNDRY PRODUCTS: Technical Data Sheet

NEW PRODUCT: POLYURETHANE NO BAKE RESIN SYSTEM: *Rapidur DeMinimis™*

DESCRIPTION:

A state of the Art, highly advanced version of the Rapidur Binder system.

- *Contains substantially lower harmful chemical content for improved environmental performance*
- *Provides optimised strengths and curing profiles for all applications*
- *Combines all the benefits that Rapidur binders have provided the foundry market for 20 years*

Rapidur DeMinimis™ has been developed to help foundries lower reported emission levels and secure operating permits. To achieve this, the product is largely devoid of the various sub components that create regulatory issues. A significant reduction in Hazardous Air Pollutants compared to standard systems in the marketplace has been achieved while allowing for in process use without any equipment alteration. Furthermore, this product has been successfully engineered to provide all the performance benefits of the standard Rapidur system – fast thru cure, excellent tensile strength development, consistency of production, excellent reclaimability, low viscosity even in cold weather while maintaining the ability to run consistently at the lowest binder levels the PUNB process can operate.

CHARACTERISTICS:

This next generation RAPIDUR NO-BAKE SYSTEM is made up of the following three components:

1. **DeMinimis A Phenolic binder** – low in free formaldehyde and free of naphthalene containing organic solvents to address environmental and permitting consideration
2. **DeMinimis B Isocyanate Solution** – a high curing, warpage resistant product that can be used at considerably lower levels than previous systems
3. **DeMinimis C Catalyst** – encompassing the first aromatic solvent free catalyst*
* This system will work with all current Rapidur catalysts

The *Rapidur DeMinimis™* is a cold curing system that allows for fast, continuous production and offers tremendous scope for large and small moulding/core making.

The DeMinimis system is designed to be used at a ratio of 65:35 Part A to Part B (or even 70:30). In doing this the resin reduces the Isocyanate component:

- i) Improving the H&S and making the binder more user friendly
- ii) reducing cost by minimising the amount of the more costly MDI
- iii) lowering the nitrogen availability within the resin

The unique chemistry lowers smoke and soot formation during metal pouring. The *Rapidur DeMinimis™* system has a much lower susceptibility to carbon pick-up, lustrous carbon, nitrogen and gas defects.

The Rapidur DeMinimis system significantly improves the working conditions for operators within the plant while reducing external odor and smoke issues within the neighbourhood.

FIELD OF APPLICATION

Large or small quantities of cores and moulds for cast iron, steel, bronze, aluminium or light alloy castings. As with all Mancuso Chemicals Ltd.'s PUNB products, it is designed to work on all production platforms, across all geographical locations and local conditions.

For optimum usage sand and foundry temperatures should be controlled within 75-95 °F although, as other Rapidur binders, these resins maintain a useable viscosity even in cold working and storage conditions. The binder system will also work under severe applications in foundries where hot sand is problematic.

The product includes built in chemical release agents for improved stripping and allows well-maintained, modern mixers to maximize their mechanical efficiencies.

PHYSICAL AND CHEMICAL PROPERTIES ** Typical.

All methods from ISO 9001:2000/mcl.labmet

	<u>DeMinimis A</u>	<u>DeMinimis B</u>
Specific Gravity 25°C kg/l	1.040 – 1.100	1.090 – 1.160
Viscosity CPS	50 max	50 max
Refractive Index @ 25°C	1.5290 – 1.5500	1.5800 – 1.5980
Colour / State	Amber / Heavy Liquid	Brown / Liquid
Odour	Mild Aromatic Odour	

METHOD OF APPLICATION (standard):

100 parts in weight silica sand AFS 50 – 55

0.5 – 0.8 " " " **DeMinimis A**

0.25 – 0.4 " " " **DeMinimis B**

Catalyst - 2-8% by weight based on A

The **RAPIDUR DeMinimis** system is designed to be used at a ratio of 60-70% Part A to B. Curing depends on the strength of the catalyst used, sand temperature and quality of reclaimed sand. Work times from 1 – 30 minutes are available as are strip times.

The resins are generally combined at 0.8 – 1.1% based on sand. Lower levels can be achieved in foundries with good sand control and well maintained, high efficiency mixers. When using cold or new sand, the higher levels may be necessary.

SHELF LIFE:

Good for at least twelve months if unopened and not stored in direct sunlight.

SAFETY MEASURES

Safety glasses and rubber gloves must be used when transferring. Consult MSDS for further information. Please comply with all local regulations and consult with your own Health and Safety staff before trying new chemicals.

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