

TECHNICAL DATASHEET

Binder PI is a polyether-based prepolymer used as a one component moisture curing systems where highly flexible films are required. It is 100% solids - zero V.O.C.

Application

Binder PI is particularly recommended for use as an elastomeric binder for crumb rubber.

Product Specification

Specific Gravity at 25°C	1.08 – 1.12
Viscosity at 25°C (cPs)	3400 - 4600
Appearance	Straw coloured viscous liquid

Processing Conditions

One pack surface coating

Binder PI, when applied as a film in either the solid state or in solution with solvents, will react with moisture from the atmosphere and convert from a liquid to a solid in one or two days. Optimum properties are reached over a seven-day period. Temperatures, either high or low, do not influence the reaction which is more dependent on conditions of humidity and film thickness. The by-product of this NCO/moisture reaction is carbon dioxide which is liberated from the film before gelation occurs. It has been known under conditions of high humidity which accelerates the gel time, for carbon dioxide to become trapped in the film. This problem may be overcome by incorporating suitable high boiling solvents which hold the film "open" for some time.

Pigments and fillers may be dispersed in **Binder PI** provided they are substantially water free *i.e.* below 0,05%. The same water level must be observed when extending **Binder PI** with rubber crumb.

Moisture may be selectively absorbed by incorporating scavengers such as molecular sieves. A pre-reaction step with a mono or di-isocyanate has also proved to be an effective method of neutralising undesirable reactive groups contained in pigments, fillers and solvents.

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The curing time can be shortened by the addition of $\pm 0,1\%$ m/m of an amine type catalyst. The physical properties of the bound rubber article may be enhanced by heating the partially cured article to 90 - 100°C for 30 minutes to 3 hours, shortly after demould.

Note: As with all polyurethane products, the product should not be exposed to very strong acids or bases. The highest temperature at which the product should be used is 80°C - 85°C in order to maintain the full physical properties. The material can tolerate short period temperature increases up to approximately 120°C without permanently impairing any of the physical properties.

Storage

Should be stored between 20 - 30°C in a dry environment. Prolonged or repeated heating of the material will accelerate decomposition. Partly used containers should be resealed immediately after use

Packaging

Standard packs consist of 25kg steel drums. Larger packs are available on request.

Handling Precautions

Consult the product's material safety data sheet (MSDS) for specific hazard and handling information before use.

Binder PI is an isocyanate containing material and normal standards of industrial hygiene should be observed during its handling. Safety goggles, gloves and overalls should be worn, and the material should preferably be used in a well-ventilated area. Inhalation of its vapours should be avoided.

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