

## KBI FLEXI-PROCESS BINDING AGENT V.O.C. DETAILS



### GENERAL PRODUCT GUIDELINES

---

XFP 75 is a one component polyurethane system.

The hazardous compound of relevance in this polyurethane system is Diphenylmethane Diisocyanate CAS number 9016-87-9. The MSDS for this product states that the combined forms of MDI (isomers, monomers, polymeric MDI pMDI, and oligomers) are less than 25.0% by mass of the product.

The species of MDI that is most relevant to health concerns as a respiratory irritant is monomeric MDI as small amounts of this substance can escape into the atmosphere at ambient or elevated temperatures.

The OSHA Personal Exposure limit for MDI is 0.02 ppm. This rating is most applicable to enclosed work places where the monomer can build in concentration.

MDI is a reactive substance in the polyurethane. As such, the majority of monomer will react with atmospheric moisture rendering it completely benign. Only trace amounts of monomer will escape into the atmosphere and this concentration will be further diluted by wind.

Polyurethane products have been used in the sports track and industrial industries for decades and are widely available to non-commercial consumers.

It is adamant that the users of the product read and adhere to the MSDS for a safe installation. We cannot overemphasize this point.

It should be made clear that monomer testing is a very complicated process and the laboratory results may not be a true indicator of field operations. If exposure limits are an immediate concern, it is recommended that testing be done at the worksite to determine airborne concentrations.

### EXTENDED DETAILS

---

While it is correct that all isocyanates can cause sensitization effects on humans when exposed to elevated doses of their monomers for extended periods of time, KBI is using a prepolymer (blend of polyols and isocyanates) having a significantly lower monomer content than a pure isocyanate. XFP 95 is based on MDI, so neither TDI or HMDI is present in the formulation. The application of the product is outside, so it is very unlikely that the mandated OSHA exposure limits (designed for indoor applications) on inhalation will be reached at all; the normally worn protective work equipment as mandated in the MSDS should prevent your staff from skin contact. Finally, during your application the product is neither being sprayed or heated. Once your product is cured, the hardened binder is completely benign and harmless for your client. The product contains no heavy metals, UV stabilizers or catalyst of any kind.

Provided the binder content in your system we assume that the entire surface area of both the rubber as well as the aggregate contained in your system is well coated with prepolymer, ensuring both appropriate encapsulation as well as a stable matrix and thus preventing break- or wash out of individual components.

The technology of using PU binder and recycled rubber for outdoor flooring applications in general is a common application in the area of sports and recreational surfaces since over 25 years. Studies in the younger past on playgrounds and turf fields have repeatedly shown that there is no negative environmental impact resulting from washout through these surfaces, but rather a filtering effect. Our company has gotten its permeable and impermeable running track surface systems tested and certified for the ecological requirements of the German DIN 18035-07 standard, which sets a very high bar to pass. Although your product is not exactly the same, its underlying principle is well comparable.



smarter materials for  
next generation infrastructure™

K.B. Industries, Inc. • 28100 US Hwy 19, Suite 410 • Clearwater, FL 33761  
p: 727.723.3300 • f: 727.723.3600 • www.kbius.com