



Lupranate[®] 5080 Isocyanate

Lupranate 5080 Isocyanate is a 15.9% Free-NCO prepolymer based on diphenylmethane diisocyanate (MDI) chemistry. The formulation of Lupranate 5080 Isocyanate provides the low viscosity and physical properties required for high-quality, fixed-ratio spray applications. This isocyanate prepolymer is at least 95.0% solids. In coatings applications, BASF recommends adherence to EPA Method 24 for VOC calculations. Although VOC calculations are the responsibility of the system formulator, some basic guidelines are discussed in the Supplemental Technical Bulletin for Lupranate 5080 Isocyanate.

TYPICAL PROPERTIES

Appearance	bright yellow liquid
NCO content, wt%	15.9
Viscosity @ 25°C, cps	330
Flash point, °C (COC)	> 200
Density @25°C, g/cm³	1.13
Initial boiling point, 5mm Hg, °C	190
Vapor Pressure @25°C, mm Hg	< 0.0002

Storage

Lupranate 5080 Isocyanate is supplied in tank trucks or drums. Once a container has been opened, care should be taken to exclude moisture. The most favorable temperature for storage is 20-30°C. If stored at higher temperatures, or if moisture is not excluded, an undesirable increase in viscosity will occur. Below 20°C solid crystals may form and settle out, which can alter the performance of the product. The solid crystals contain pure MDI and in this solid form may exhibit the same dimerization characteristics as pure MDI. Unless prompt action is taken to melt the product, subsequent dimerization will proceed and may deteriorate the clarity and assay of the product. Melting the crystals is done by rolling the drum in a hot air oven at 70-90°C. The drum contents should not be heated above 60°C to minimize dimer formation.

Warning

Excessive heating or prolonged heating at 80-100°C may cause dangerous pressure build-up. Heating by electrical means is not recommended due to the danger of local overheating, which would result in dimer formation. Melting in a water bath is not recommended because of potential danger of the isocyanate reacting with water in case of drum leakage. Rolling the drum in atmospheric steam is an alternative procedure that can be used providing care is taken to ensure that the drum does not leak. The shelf life of Lupranate 5080 Isocyanate is six months if the temperature is maintained at 20-30°C and moisture is excluded.

In case of chemical emergency:

Call CHEMTREC 800-424-9300 or BASF (800-832-HELP) day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents. Outside the U.S., call (703) 527-3887.

Attention:

This product is sold solely for use by industrial institutions. Refer to our Safety Data Sheet (SDS) regarding regulatory compliance, safety, hazards, spill procedures and disposal of this product. An SDS as well as additional information on BASF urethane chemicals may be obtained by telephoning BASF Corporation, Urethane Customer Service at (877) 297-3322 or faxing (734) 324-6866.

Important:

While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE.

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In coatings applications, BASF recommends referring to EPA Method 24 for volatile organic compound (VOC) calculations when formulating with Lupranate® 5080 Isocyanate. The Lupranate® 5080 prepolymer is approximately 95.0% solids. It is the responsibility of the formulator and/or end-user to determine and report the appropriate VOC pounds per gallon. Most commercial diluents found in isocyanate prepolymers provide the improved viscosity and flow required for 2-component, spray-applied coatings. However, these diluents can be VOC contributors under EPA Method 24 (Procedure B). For example, an experimental 2-component hybrid coating was formulated to test Lupranate® 5080 Isocyanate under EPA Method 24. This formula was designed for a 1:1 (by volume) cartridge dispenser with a static mixer or spray tip.

TABLE 1: Experimental 2-Component Polyurea-Hybrid		
Resin	PBW	OHV
BASF PEA D-2000	75.00	56.0
BASF PEA T-5000	0.00	35.0
Albemarle Ethacure® 100	5.00	629.4
BASF Quadrol® Polyol	20.0	770.0
Isocyanate	PBW	%FNCO
Lupranate® 5080 Iso	112.5	15.9

A professional, outside laboratory was contracted for the VOC testing. Following EPA Method 24, the lab measured approximately 0.25 pounds per gallon VOC from the experimental 2-component coating. ASTM Test Method D2369 was used to calculate approximately 2.7% volatiles in the finished system. It is the responsibility of the formulator and/or end-user to determine the appropriate VOC pounds per gallon in their individual formulations.

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