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Technical Data Sheet

Version: 10

Edition: 08.19

Lupranat® MEB

Chemical nature

Lupranat MEB is 4,4'-diphenylmethane diisocyanate (MDI) with low acidity. Lupranat MEB contains a stabiliser, in order to prevent yellowing.

Applications

Lupranat MEB is used for the manufacture of elastomers and thermoplastic polyurethanes. It is also used for the production of paintings, adhesives and coatings.

Typical properties

Appearance at room temperature:	white crystalline solid
Appearance in melted condition:	Clear, colourless liquid

Molar mass	250	g/mol	
Purity	99.5	g/100 g	titrimetric
NCO-content	33.5	g/100 g	ASTM D 5155-96 A
2,4'-isomer	1.5	g/100 g	GC
Melting point	38.5	°C	ASTM D 1638-74
Acidity as HCl	5	mg/kg	Titrimetric
Hydrolysable chlorine	10	mg/kg	Titrimetric
Total chlorine	20	mg/kg	ASTM D 1638-74
Viscosity at 42 °C	5	mPa·s	DIN 53 018
Density at 42 °C	1.22	g/cm³	DIN 51 757
Specific heat at 50 °C	1.5	kJ/(kg · K)	
Latent heat of fusion	110	kJ/kg	

Lupranat® MEB

Delivery

Lupranat MEB can be delivered in two forms:

	container	quantity
Lupranat MEB liquid	heated road tanker	10 t max. 26 t
Lupranat MEB solid	non-returnable drum	240 kg

Transport temperature should normally be the same as storage temperature. For road tankers, the temperature should be between 39 °C and 47 °C. The bulk density of flakes is 0.57 kg/dm³.

Storage

Lupranat MEB is sensitive to moisture. The product slowly forms dimeric diphenylmethanediisocyanate, which is seen as a precipitate and which might influence the properties of the final products if used for special applications. This dimer cannot be removed by heating.

Liquid Lupranat MEB can be stored up to about a fortnight only in a narrow temperature range of about 41 °C to 45 °C and under a dry nitrogen blanket. It is essential to be able to accurately control the temperature of the storage tank and associated pipework to avoid cold spots. Consequently, the recommendation is to keep Lupranat MEB in circulation via a double pipe arrangement in which a heating medium surrounds the inner pipe which carries the Lupranat MEB. The temperature of the heating medium should be strictly controlled for each line, whereas water, glycol and its mixings must not be contained in the heating medium. Trace heating should be used at the bottom, and in the walls, of the storage tank.

Solid products should be stored at temperatures below +5 °C, but preferably considerably below 0 °C; under this condition and if moisture and oxygen are excluded, Lupranat MEB can be stored for at least 2 to 3 months.

Drums containing Lupranat MEB stored at temperatures lower than room temperature must not be opened in a moisture containing atmosphere. Complete warming up to room temperature prior to utilization avoids condensation of moisture on the crystals.

Solid Lupranat MEB can be melted out immediately in a hot air oven at an air temperature of 80 °C to 100 °C. The heating period must be as short as possible; during heating the overall temperature of the product must not exceed 70 °C. Local overheating must be avoided, because the product will be destroyed at temperatures above 230 °C with consequent gas production. Rolling of the drums in a hot air oven is the recommended method of dissolving the crystals.
More detailed information on transport and storage of isocyanates is given in the ISOPA-Guidelines "For Safe Loading / Unloading Transportation Storage of TDI and MDI in Bulk" and "For the Safe Transportation, Unloading & Storage of Packaged TDI & MDI".

Safety advice and environmental protection

Labelling, transportation, storage, processing, waste treatment and disposal must comply with national regulations. Occupational exposure limits are to be observed.

Luprant MEB is classified as harmful if inhaled. It causes skin irritation and serious eye irritation. It may cause respiratory irritation. It may cause sensitisation by inhalation and skin contact. It is suspected of causing cancer. It may cause damage to organs though prolonged or repeated inhalation exposure.

Before processing the product, we recommend reading the safety data sheet. For further information consult our Technical Information leaflet "Safety and Precautionary Measures for the Processing of Polyurethane Systems".

In order to avoid accidents, the residual product in the drums must be handled with care. Any water or moisture which is allowed to enter the drum will react with Lupranat MEB and release carbon dioxide. Unless action is taken to prevent moisture entry or gas entrapment, the drums will become pressurized and could rupture.

If it is intended to use BASF materials for the manufacture of toys or consumer goods (e. g. products which will come into contact with foodstuffs or with the skin) or medical products, national and international regulations have to be observed.

In the case that migration tests or tests of trace monomers are recommended in the special legislations by the manufacturer of consumer goods, the obligation to fullfill these requirements and to conduct tests for the supplied products is still in the hand of the customer. BASF cannot take over this responsibility for the use of its products from our customers.

Where no regulations exist, consumer goods or medical products must at least comply with European legislation. We recommend contacting our Sales and our Ecology and Product Safety departments.

Lupranat® MEB

Disposal of drums

Residues of MDI remaining in drums must be neutralized. Information on disposal is given in our Technical Information “Safety and Precautionary Measures for the Processing of Polyurethane Systems”. Please contact our local agencies for further information.