

## Product Information

CM – Monomers Division

### TECHNICAL DATA SHEET

Document name: TDS\_Lupranat MES\_10350791  
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Product: **Lupranat® MES**  
PBG-No.: 10350791  
Chemical Name: Isocyanate component

**Chemical nature** Lupranat MES is a 4,4'-diphenylmethane diisocyanate (MDI) with low acidity. Lupranat MES contains a stabilizer, in order to prevent yellowing.

**Applications** Lupranat MES is used for the manufacture of elastomers and thermoplastic polyurethanes. It is also used for the production of pigments, adhesives and coatings.

**Typical properties** Appearance at room temperature: white crystalline solid  
Appearance as a liquid: colourless, clear

2,4'-isomer	1.5	g/100g
Acidity as HCl	3	mg/kg
Density at 42 °C	1.18	g/cm <sup>3</sup>
Hydrolysable chlorine	10	mg/kg
Melting point	38.5	°C
Molar mass	250	g/mol
Total chlorine	15	mg/kg
Viscosity at 42 °C	5	mPa·s

Specific heat at 50°C	1.5	kJ/(kg · K)
Latent heat of fusion	110	kJ/kg

**Delivery** Lupranat MES can be delivered in two forms:

	container	quantity
Lupranat MES liquid	heated road tanker	10 t to max. 30 t
Lupranat MES frozen	non-returnable drum	240 kg

Transport temperature should normally be the same as storage temperature. For road tankers, the temperature should be between 41 °C and 49°C.

**Storage** Lupranat MES is sensitive to moisture. The products slowly form 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 MES 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

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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 MES in circulation via a double pipe arrangement in which a heating medium surrounds the inner pipe which carries the Lupranat MES.

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. Frozen products should be stored at temperatures below 0 °C, but preferably considerably below -10 °C; under this condition and if moisture and oxygen are excluded, Lupranat MES frozen can be stored for at least 6 months. Drums containing Lupranat MES frozen 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.

Crystallized products must 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 decomposed at temperatures above 230 °C with consequent gas production. Rolling of the drums in a hot air oven is the recommended method to melt the solid. After melting out, the content of the drum must be thoroughly mixed.

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**

Transportation, storage, processing, waste treatment and disposal must comply with national regulations.

Lupranat MES is classified as harmful if inhaled. It is irritating to the eyes, respiratory system and skin and may cause sensitization by inhalation and skin contact.

National regulations for exposure limits and labelling must also be observed. Before processing the product, we recommend reading the safety data sheet.

In order to avoid accidents, the residual product in the drums / IBC must be handled with care. Any water or moisture which is allowed to enter the drum will react with MES 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 this BASF material for the manufacture of materials and articles intended to get in contact with food or drinking water or for medical devices,

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toys or consumer goods (e.g., products which will come into contact with the skin), respective national and international regulations have to be observed.

Please note that for each of the aforementioned sensitive applications, there might be recommended or mandatory migration tests or tests of residual monomers or impurities in the specific legislations for such materials and articles. The obligation to fulfill these requirements and to conduct tests for the final material and article containing the supplied BASF materials is the responsibility of the customer or producer of the final materials and articles. Thus, BASF is not able to take over any responsibility in this respect, neither for such testing nor the actual use of the respective BASF materials in such applications.

Where no regulation exists, we recommend contacting our Sales and our Product Stewardship department.

**Disposal of drums** Residues of MDI remaining in drums / IBC's must be decomposed. Please contact our local offices for further information on national disposal regulations.

**Note** The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.