



ONGRONAT® ISOCYANATES

ONGRONAT® 3000

TECHNICAL DATA SHEET

Product

4,4'-methylenediphenyldiisocyanate

Appearance

White crystalline solid at room temperature, and colourless liquid in melted form.

Application area

With suitable polyols it can be used as the isocyanate component for producing elastomers, adhesives, coatings, fibres, flexible-and semi-flexible integral foams and thermoplastic polyurethanes.

Typical property range

NCO content	: min. 33.4	wt%	ASTM D5155
Purity	: min. 99.5	%	ASTM D5155
Hydrolysable chlorine	: max. 100	ppm	BorsodChem method PAK15
Colour	: max. 50	APHA	ASTM D1209

Other physical properties

Density (at 43 °C)	: 1.18	g/cm ³
Viscosity (at 43 °C)	: 5	mPa.s
Flash point	: >200	°C
Freezing point	: 38,8	°C

Transport and packaging

In tank road tankers, 1000 l containers, 250 kg non-returnable metal drums, or in metal cans under nitrogen blanket.

Storage

ONGRONAT® 3000 preserves its quality at 41-45 °C under a nitrogen blanket (dew-point of - 40 °C) for two weeks. In case of longer storage period - due to dimerization - the product can become opaque. It is recommended to store the product below -20 °C in solid form, thus its quality may be preserved for max. three months. Above this temperature the rate of dimerization will increase exponentially with temperature increase and will result in a maximum at the surroundings of the melting point. It is not recommended to store the product at ambient temperature or above.



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The next conditions must be considered during remelting of solid ONGRONAT® 3000:

- drums under overpressure must not be heated up
- local overheating must be avoided
- time of remelting must be as short as possible. Heat transfer efficiency should be maximised.

Taking into consideration of the above mentioned recommendations, the suggested remelting procedures are the following:

Hot air furnace:

Air temperature in the furnace should be kept at 70-80 °C.

Air circulation must be ensured around the drums placed into the furnace, if possible by using of a built-in ventilator. It is expedient to rotate drums on rolls with a velocity of about 1-2 rotations/minute. If it is not possible then the drums should be shaken often. Under these conditions the content of a drum of 225 kgs net weight can be remelted within 15 hours.

Steam tenant:

Drums, in upright position, must be placed in a closed area, then the area should be flooded with low-pressure (max. 2.5 barg) wet steam. Inside temperature must be kept at 80-90 °C by controlling the inlet steam quantity. If possible the drums should be moved often. The remelting period is 6 hours.

Water bath:

Drums, in upright position, must be placed in a water bath at 60 °C and hot water must be circulated with high velocity around the drums. Drums have to be rotated often. The remelting period is 6 hours.

Before opening the drums, the top must be wiped off ensuring that no water can enter the drums. Opening the heated drums must be done with care because pressure may have built up inside. Overpressure generated due to heating up the drums must be released gradually. The product must not get into contact with water. In order to prevent water (moisture) ingress into the product, nitrogen is used usually (dew point -40 °C) to displace the air from the drums or containers. It is not advised to use dry air as an inert blanket for the above purpose because due to the contact with air or oxygen the colour of the product can change to yellow by unwanted oxidation. Carbon-dioxide is soluble in isocyanate, so it cannot be used as an inert gas either.

Safety precautions

All activities related to isocyanate handling are potential sources of danger; therefore special care must be taken when working with it.

Handle the material with care. Avoid contact with water and damp. Avoid contact with skin and eyes. Do not inhale the vapours of the product.

Detailed safety information is available in the specific Material Safety Data Sheet.

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