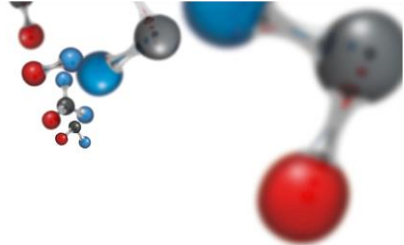


TECHNICAL DATA SHEET (TDS)

ONGRONAT® TR 4500



- **Product description:** ONGRONAT® TR 4500 is a mixture of m-toluene-diisocyanate isomers and oligomeric MDI.
- **Appearance:** Solvent-free, brown, low viscosity liquid at room temperature
- **Features & benefits of the end product produced using ONGRONAT® TR 4500:** Comfort, Durability, Odour resistance, Safety, Light weight
- **Industry:** Transport
- **Applications:** Seats, headrests & armrests

SPECIFICATIONS

Property	Value	Dimension	Test Method
NCO	43.8 - 45.8	wt%	ASTM D5155
Viscosity [at 25 °C]	max. 10	mPa.s	ASTM D4889

OTHER PROPERTIES*

Property	Value	Dimension
Solidification temperature	12 - 14	°C
Density [at 25 °C]	1.21	g/cm ³

*Parameters given in the other property range are only typical values, therefore they are not part of the specification.

PACKING, STORAGE & TRANSPORT

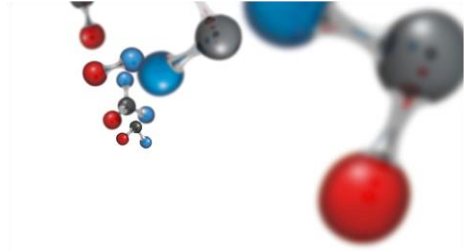
Transport and packing: ONGRONAT® TR 4500 can be loaded and transported in tank road tankers, 225 kg non-returnable metal drums under nitrogen blanket. The loading temperature is 40-45 °C in bulk and 20-30 °C in the case of drummed product. Please note that based on the distance of the destination the delivery temperature may differ from the loading temperature, but still remains in the range of 15-40 °C in the case of bulk product. When transporting ONGRONAT® TR 4500 in drums the temperature must be kept in the range of 15-30 °C, therefore the exposure of the drums to cold shocks or prolonged effect of intensive sunlight must be avoided. We ship ONGRONAT® TR 4500 according to the above mentioned delivery temperature ranges in the lack of any special requirement.

Storage: Normal processing temperature of ONGRONAT® TR 4500 is between 20-25 °C. It is recommended to store the product within this temperature range. Under these conditions the quality will be maintained for max. three months from the date of production. The material can also be stored within the temperature range of 15-30 °C without affecting its quality significantly. The material is reactive with water, water ingress or reaction with the atmospheric moisture leads to quality deterioration. In order to protect the material from atmospheric moisture a dry inert gas blanket (nitrogen) with a dew point of

-40 °C must be used for any type of containers (drums or storage tanks). Dry air is not recommended for this purpose because it could cause oxidation and due to this, the colour of the product may become darker. Carbon dioxide (CO₂) is soluble in isocyanates, therefore it is not recommended to be used as inert gas either. During the loading and the storage of the drummed products the instructions of ADR, RID, IMDG and the recommendation of ISOPA have to be strictly observed.

TECHNICAL DATA SHEET (TDS)

ONGRONAT® TR 4500



SAFETY PRECAUTIONS

Handle the material with care. Avoid contact with water and moisture. Reaction with water always results formation of CO₂ and therefore increase of pressure in the closed storage

container. Avoid contact with skin and eyes. Do not inhale the vapours of the product. Detailed safety information available on the www.borsodchem-group.com website and in the specific Material Safety Data Sheet.

Version: English
Date: 02.02.2012
Technical Data Sheet (TDS)
ONGRONAT® TR 4500

www.borsodchem-group.com

This information is based on our most recent knowledge. However, the application and processing of the material after sale is beyond our control and we cannot assume responsibility for use of this material outside BorsodChem premises. The user is obliged to check the suitability of this material for the intended use and accepts sole responsibility for compliance with any legal requirements relating to its use. This document does not constitute a warranty or guarantee.



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