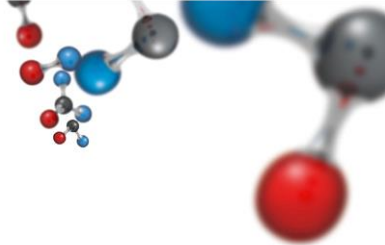


TECHNICAL DATA SHEET (TDS)

ONGRONAT® 1080



- **Product description:** ONGRONAT® 1080 is a mixture of m-tolylidene diisocyanate isomers: 4-methyl-m-phenylene diisocyanate and 2-methyl-m-phenylene diisocyanate in a nominal ratio of 4.
- **Appearance:** Water clear liquid at room temperature
- **Features & Benefits of the end products produced using ONGRONAT® 1080:** Comfort & support, Excellent adhesion, Silence, Durability, High gloss
- **Industry:** Construction; Furniture, Bedding & Decoration; Transport; Wood
- **Applications:** Adhesives & binders; coatings and sealants, mattresses & pillows; office & medical furniture; paints & coatings; seating, headrests & armrests; paints & coating

SPECIFICATIONS

| Property | Value | Dimension | Test Method |
|----------------------------|-------------|-----------|-----------------------------|
| Purity | min. 99.5 | wt% | BorsodChem Method TVM - 380 |
| 2,4 isomer content | 79.0 – 81.0 | wt% | BorsodChem Method TVM - 340 |
| Acidity [as HCl] | max. 15 | ppm | BorsodChem Method TVM-337-3 |
| Hydrolysable Chlorine [Cl] | max. 50 | ppm | BorsodChem Method TVM-337-4 |

OTHER PROPERTIES*

| Property | Value | Dimension |
|-------------------------------|---------|-------------------|
| Total Chlorine content | max 300 | ppm |
| Colour | max. 15 | APHA |
| Solidification Temperature | 12 - 14 | °C |
| Density [at 25 °C] | 1.21 | g/cm ³ |
| Viscosity [at 25 °C, dynamic] | 3 | mPa.s |

*Values given in the „other properties” section are only typical values, therefore they are not to be considered as part of the specification.

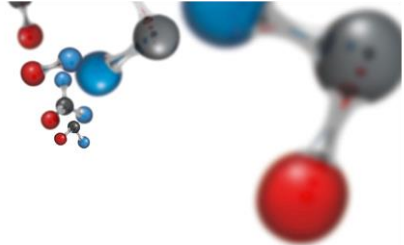
PACKING, STORAGE & TRANSPORT

Transport and packing: ONGRONAT® 1080 is delivered in mobile tanks, road tankers or in 250 kg non returnable metal drums under nitrogen blanket. ONGRONAT® 1080 is loaded in the temperature range of 20 – 26 °C or 32 – 36 °C in case of bulk delivery and in the temperature range of 30 – 36 °C for drummed delivery. 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 20 – 40 °C for bulk product. For intermodal delivery the above delivery temperature can not be warranted. Because of the length of storage and the transit times the delivery temperature can not be warranted for drummed product either. For this reason – especially in the case of drums – the product may be in solid state when delivered to the receiving site. Freezing does not have a negative impact onto the quality of the product,

however if it happens, it needs to be melted and homogenized before use. More detailed instructions on melting are provided below. ONGRONAT® 1080 is delivered according to the above mentioned conditions in the lack of any special requirement. Recommended storage temperature of ONGRONAT® 1080 is 20 - 40 °C. To avoid chemical reaction with water, contact with atmospheric humidity should be prevented. Since atmospheric oxygen may cause discoloration, application of nitrogen blanketing in the storage tank is recommended. CO₂ is not recommended to be used as an inert gas, since it dissolves well in isocyanates. During the loading and the storage of the drummed products the instructions of ADR, RID, IMDG and the recommendations of ISOPA have to be strictly observed. In case of delivery in drums the colour cannot be warranted! If the ONGRONAT® 1080 isomer mixture is cooled below its advised storage temperature the fractionated crystallization of its 2,4 TDI-isomer content happens first

TECHNICAL DATA SHEET (TDS)

ONGRONAT® 1080



resulting in a compositional change of the liquid phase. In case of crystallization of any degree we recommend thawing the product at a set temperature of 25 – 50 °C. After the completion of the melting process the product needs to be homogenized to restore its original composition. If it is not consumed immediately after the remelting, we recommend storing the product in line with the above storage temperature requirements. Quality features of re-heated ONGRONAT® 1080 are expected to be unchanged after melting and homogenization. During the remelting procedure discoloration may occur after prolonged effect of high temperature.

Besides the strict observation of the above information the product preserves its quality for a period of 12 months from the date of its production.

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. When storing the product in drums attention needs to be paid to avoid stacking it to more than 2 levels in order to prevent the failure of the pallets or the packaging material leading to injury or damage. Detailed safety information available on the www.borsodchem-group.com website and in the specific Safety Data Sheet.

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Technical Data Sheet (TDS)
ONGRONAT® 1080

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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