

# Desmodur<sup>®</sup> 44 M Liquid

## Characterization

Desmodur<sup>®</sup> 44 M Liquid is a monomeric diphenylmethane-4,4'-diisocyanate (MDI).

Desmodur<sup>®</sup> 44 M Liquid is a monomeric diisocyanate that is solid at room temperature and liquid above around 40 °C. It is suitable for combination with Baycoll<sup>®</sup>, Desmophen<sup>®</sup> and Acclaim<sup>®</sup> in the formulation of adhesives and polyurethane coating resins.

## Form supplied

Colorless to pale yellow liquid of low viscosity that crystallizes at temperatures below 38.4 °C

## Specification

Property	Value	Unit of measurement	Method
4,4'-MDI	min. 98.2	%	MDI-01-06
2,4'-MDI	max. 1.8	%	MDI-01-06
Hydrolysable chlorine	max. 50	mg/kg	MDI-01-04
Dimer	max. 0.1	%	MDI-01-08

\*Valid only for the time of delivery

## Other data\*

Property	Value	Unit of measurement	Method
Freezing point	min. 38.4	°C	(2011-0260102-92)
NCO content (theoretical)	33.6	% by wt.	
Phenyl isocyanate content	max. 10	ppm	(2011-0489801-95)
Viscosity at 40 °C	4.1	mPa·s	(2011-0313703-95)
Density at 40 °C	approx. 1.19	g/cm <sup>3</sup>	DIN 51 757
Vapor pressure at 20 °C	< 10 <sup>-5</sup>	hPa	

\*These values provide general information and are not part of the product specification.

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### Storage

- Storage in original sealed Covestro container.
- Recommended storage temperature: 41 - 45 °C.
- Protect from moisture, heat and foreign material.

General information: The product is sensitive to moisture. Like all isocyanates, it reacts with water to form insoluble urea derivatives and carbon dioxide. In closed containers, the formation of carbon dioxide can result in a dangerous build-up of pressure. Contact with air, especially coupled with exposure to light, accelerates the yellowing of the product. Liquid product should therefore be padded with dry nitrogen. Generally speaking, the processing properties are not affected by yellowing. As a result of dimerization (formation of uretdione), the product is sensitive to heat. The solid product dimerizes more quickly at room temperature than the liquid product stored at 42 °C. Therefore, solid product should be stored at temperatures below 5 °C and melted quickly and carefully. Although dimerization declines with decreasing temperature, the storage stability is also limited at 5 °C. Handling instructions, safety data, information about the transport of bulk liquids and customer tank farms and proposals for melting units can be supplied on request.

Detailed information on safe handling, transport and storage of isocyanates is given in the guidelines of the ISOPA association.

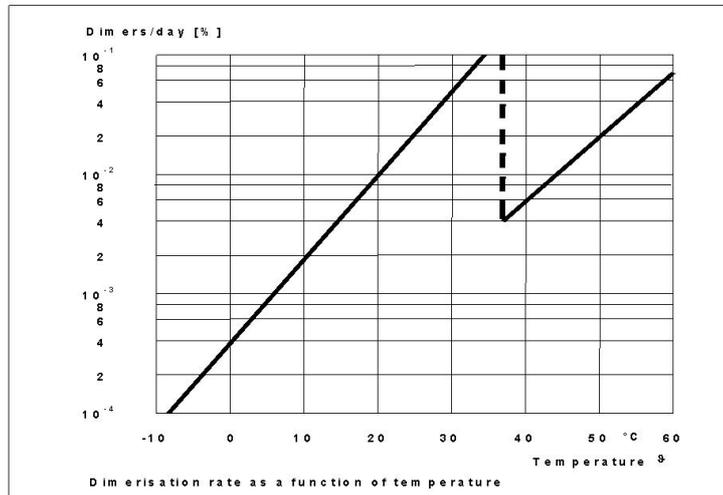
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### Storage time

Covestro represents that, for a period of **three weeks** following the day of shipment as stated in the respective transport documents, the product will meet the specifications or values set forth in section "specifications or characteristic data" above, what ever is applicable, provided that the product is stored in full compliance with the storage conditions set forth in and referenced under section "storage" above and is otherwise handled appropriately.

The lapse of the three weeks period does not necessarily mean that the product no longer meets specifications or the set values. However, prior to using said product, Covestro recommends to test such a product if it still meets the specifications or the set values. Covestro does not make any representation regarding the product after the lapse of the three weeks period and Covestro shall not be responsible or liable in any way for the product failing to meet specifications or the set values after the lapse of the three weeks period.

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## Processing

It must be ensured that the containers - including those that are empty - are kept sealed. Above all, contact with water must be prevented as it reacts with Desmodur<sup>®</sup> 44 M Liquid to form polyureas and carbon dioxide. During storage, sample withdrawal, transfer and processing of Desmodur<sup>®</sup> 44 M Liquid, the ingress of water in any form (damp containers, aqueous solvents, moist air) must be prevented as otherwise the formation of carbon dioxide may cause a dangerous increase in pressure in the tanks and containers. Furthermore, the formation of polyureas in Desmodur<sup>®</sup> 44 M Liquid may cause turbidity and possibly solid deposits which may then block filters, pumps and pipelines.

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**Labeling and statutory requirements** This product data sheet is only valid in conjunction with the latest edition of the corresponding Safety Data Sheet. Any updating of safety-relevant information – in accordance with statutory requirements – will only be reflected in the Safety Data Sheet, copies of which will be revised and distributed. Information relating to the current classification and labeling, applications and processing methods and further data relevant to safety can be found in the currently **valid Safety Data Sheet**.

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**Disposal** Please pay attention to the current safety data sheet.

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The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you utilize our products, technical assistance, information and recommendations to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by Covestro. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

This product is not designated for the manufacture of a medical device or of intermediate products for medical devices<sup>1</sup>). [This product is also not designated for other specifically regulated applications (e.g. including cosmetics, plant protection, fertilisers, plant strengtheners, food processing, food contact and others). If the intended use of the product is for the manufacture of a medical device or of intermediate products for medical devices or for other specifically regulated applications Covestro must be contacted in advance to provide its agreement to sell such product for such purpose.] Nonetheless, any determination as to whether a product is appropriate for use in a medical device or intermediate products for medical devices, for Food Contact products or cosmetic applications must be made solely by the purchaser of the product without relying upon any representations by Covestro. 1) Please see the "Guidance on Use of Covestro Products in a Medical Application" document.

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Covestro Deutschland AG  
Kaiser-Wilhelm-Allee 60  
51373 Leverkusen, Germany  
[www.covestro.com](http://www.covestro.com)

**Contact:**  
CAS Single Point of Contact EMEA  
e-mail: [cas\\_spoc\\_emea@covestro.com](mailto:cas_spoc_emea@covestro.com)