

# Basonat<sup>®</sup> HI 3100

<b>Product description</b>	Basonat <sup>®</sup> HI 3100 is an aliphatic, very low viscous HDI trimer for lightfast and weather-resistant 2K polyurethane coatings.
<b>Key benefits</b>	<ul style="list-style-type: none"> <li>■ Solvent free</li> <li>■ Very low viscosity</li> <li>■ HDI based isocyanate trimer</li> <li>■ High weather resistance</li> <li>■ Good light fastness</li> </ul>
<b>Chemical nature</b>	Trimer based on Hexamethylenediisocyanate (HDI)

## Properties

**Physical form**      Transparent, low viscous liquid

<b>Technical data</b> (not supply specification)	NCO content	DIN EN ISO 11909	21.3 – 22.3 %
	NCO equivalent weight		~ 192
	Viscosity at 23 °C (73 °F) D = 1,000 s <sup>-1</sup>	DIN EN ISO 3219	750 – 1,000 mPa.s
	Platin cobalt color number (Hazen)	DIN EN ISO 6271	≤ 40
	HDI content	DIN EN ISO 10283	< 0.1 %

The NCO equivalent weight indicates the amount of Basonat<sup>®</sup> polyisocyanate as supplied containing 1 Mol of active NCO.

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## Application

Basonat® HI 3100 is the main hardener for solvent-based 2K PU High Solid coatings.

Basonat® HI 3100 is preferred to be used alone or in combination with hydrophilic isocyanates in water-based 2K PU coatings.

Basonat® HI 3100 can generally be used as a hardener for 2K PU coatings.

Due to the very low viscosity, Basonat® HI 3100 is the product of choice for 100% 2K PU coatings and adhesives.

## Formulation guideline

Combined with conventional acrylic resins, a solid content approx. 5% higher than with Basonat® HI 100 can be achieved. Using high-solids acrylic-binders (Joncryl® polyol range) the VOC level can be reduced significantly to achieve state to the art high solid coatings.

Basonat® HI 3100 allows a broad choice of solvents. For instance, when less volatile solvents would retard drying excessively, like in furniture coatings, highly volatile solvents can be chosen.

Basonat® HI grades are used to formulate particularly lightfast and weather-resistant coatings.

Basonat® HI polyisocyanates are used to crosslink most hydroxy group containing resins (acrylate resins like the Joncryl® polyols and hydroxy polyesters like the hyperbranched Basonol® HPE polyesters).

Basonat® HI polyisocyanates can be diluted with esters (butyl acetate), ketones (methyl ethyl ketone), glycoether acetates (methoxypropyl acetate) or with aromatic hydrocarbons (Solvesso®<sup>1</sup> 100, xylene).

If Basonat® HI polyisocyanates are diluted to a polyisocyanate fraction of less than 40%, turbidity, flocculation and/or sedimentation may occur during storage. Storage trials should always be carried out.

In water-based corrosion protection topcoats and DTM coatings, it is recommended to use Basonat® HI 3100 alone, as a hydrophobic isocyanate to achieve high salt-spray and humidity resistances.

The very low viscosity of Basonat® HI 3100 supports a fast and homogeneous incorporation of the hardener in several water-based OH-functional dispersions. (Basonol® AC) It is recommended to dissolve Basonat® HI 3100 in a suitable solvent around 80 % (DI-basic-esters, Acetate glycols, etc.).

To increase miscibility and improve gloss, leveling and appearance, it is possible to combine Basonat HI 3100 with hydrophilic isocyanates (Basonat® HW) in any ratio needed.

Basonat® HI 3100 supplied as a 100 % polyisocyanate can be used directly in 2K PU adhesives and putties as well as in combination with low Tg, solvent-free polyester/ polyether polyols (Sovermol®) in 100 % 2K PU solvent-free coatings for industrial and flooring applications.

Solvents, pigments or extenders etc. used, should be free from compounds containing active hydrogen groups (water, alcohols or amines).

A water content of less than 500 ppm in solvents and binders is recommended in 2K polyurethane lacquers.

The theoretical equivalent amount of polyisocyanate required for crosslinking is computed using this formula:

$$\frac{0.075 \times [\text{OH value}] \times [\text{non-volatile fraction of OH component}]}{[\text{NCO}]}$$

Example: Joncryl® 507

OH value [mg KOH/g polyol on solids]	140
Non-volatile fraction (nvf) [%]	80
Basonat® HI 3100, NCO content [%]	21.8

Dosage rate for 100 g Joncryl® 507 as supplied is 38.5 g of Basonat® HI 3100.

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## Storage

Basonat® HI 3100 is sensitive to moisture.

The ideal temperature range for storage is 10 – 30 °C and under airtight conditions (exclusion of humidity and atmospheric oxygen). Containers should be flushed with nitrogen before resealing.

### Safety

When handling this product, please comply with the advice and information given in the safety data sheet and observe protective and workplace hygiene measures adequate for handling chemicals.

### 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. The agreed contractual quality of the product results exclusively from the statements made in the product specification. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed.

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