Basonat® HI 100 NG

General

Basonat® HI 100 NG is an aliphatic isocyanurate for lightfast and weather-resistant 2K polyurethane coatings

Key features & benefits

- Solvent free
- 100% isocyanurate oligomer
- High weather resistance
- Good light fastness

Chemical nature

Isocyanurate based on Hexamethylenediisocyanate (HDI)

Properties

Appearance

Transparent, viscous liquid

Typical characteristics
(no supply specifications)

NCO content	DIN EN ISO 11909	21.5-22.5 %
NCO equivalent weight		~191
Viscosity at 23 °C (73 °F) D = 1,000 s^{-1}	DIN EN ISO 3219	2500 - 4000 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® polyisocyanate as supplied containing 1 Mol of active NCO.

Application

Basonat® HI 100 NG is a solvent free isocyanurate oligomer.

Basonat® HI 100 NG shows excellent color drift in refinish hardener formulations.

Basonat® HI 100 NG 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, e.g. acrylate resins like the Joncryl® Polyols and hydroxy polyesters like the hyperbranched Basonol® HPE Polyesters. Sufficient compatibility with polyester resins containing hydroxyl groups is not always given.

Formulation Guidelines

Basonat® HA polyisocyanates can be diluted with esters (e.g. butyl acetate), ketones (e.g. methyl ethyl ketone), glycolether acetates (e.g. methoxypropyl acetate) or with aromatic hydrocarbons (e.g. Solvesso®[1] 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.

Results from long-term weathering tests show, that in most cases gloss retention is better with isocyanurates than with polyisocyanates based on biurets of hexamethylene diisocyanate (Basonat® HB grades). In addition, due to the low viscosity the solid content can be increased when Basonat® HI grades are used instead of Basonat® HB grades.

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

$$\frac{0.075\times (\text{OH Value})\times(\text{Non-volatile of OH component})}{(\text{NCO})}$$

Example: Joncryl® 507

OH Value (mg KOH/g polyol on solids)	140
Non-volatile (nvf) (%)	80
Basonat® HI 100 NG, NCO content (%)	22

$$\frac{0.075\times 140\times 80}{22} = 38.2$$

Dosage rate for 100 g Joncryl® 507 as supplied is 38.2 g of Basonat® HI 100 NG.

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

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

1 registered trademark of Exxon Mobil Corporation

Storage

Basonat® HI 100 NG is sensitive to moisture. The ideal temperature range for storage is 10–30 °C (50–86 °F) and under airtight conditions (exclusion of humidity and atmospheric oxygen). Containers should be flushed with nitrogen before resealing.

For further detailed application information please contact our Technical Support Department.

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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