

Basonat[®] HI 100 ap

General	aliphatic isocyanurate for lightfast and weather-resistant 2K polyurethane coatings	
Range	Basonat [®] HI 100 ap	solvent-free
	Basonat [®] HI 190 B/S ap	approx. 90 % solution in a 1:1 blend of n-butyl acetate and Solvesso [®] 100
Chemical nature	polyisocyanurate based on hexamethylene diisocyanate (HDI)	

Properties

Appearance liquid

Typical characteristics

(should not be interpreted as specifications)

Basonat [®] HI 100 ap	NCO content	21.5 - 22.5 %
	viscosity at 23°C(73°F), D=1,000 s ⁻¹	2,500 - 4,000 mPa.s
	platinum-cobalt color number (Hazen)	≤ 40
	NCO equivalent weight	~ 191
Basonat [®] HI 190 B/S ap	NCO content	19.3 - 20.3 %
	non-volatile fraction	89 - 91 %
	viscosity at 23°C(73°F), D=1,000 s ⁻¹	450 - 650 mPa.s
	platinum-cobalt color number (Hazen)	≤ 40
	NCO equivalent weight	~ 212

Application

Basonat[®] HI 190 B/S ap is solution of Basonat[®] HI 100 ap. Basonat[®] HI ap grades are used to formulate particularly lightfast and weather-resistant coatings. Sufficient compatibility with polyester resins containing hydroxyl groups is not always given.

Basonat[®] HI ap 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 ap polyisocyanates are used to crosslink most hydroxy group containing resins, e.g. Joncryl[®] grades, and hydroxy polyesters.

Formulation guidelines

Basonat® HI ap 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 ap 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).

Their low viscosity allows the non-volatile fraction of coatings to 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:

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

example: Joncryl® 922

OH value (mg KOH/g polyol on solids)	140
non-volatile fraction (ncf) (%)	80
Basonat® HI 100 ap, NCO content (%)	22

Dosage rate for 100 g Joncryl® 922 as supplied:

Basonat® HI 100 ap	38.2 g
Basonat® HI 190 B/S ap	42.4 g

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 in two-component polyurethane lacquers is proven and tested. It is high risk of haze and flocculation if the water content of solvent above 500ppm.

Upon prolonged storage flocculation might occur. Pre-trials on storage stability of isocyanate component depending on formulation are recommended.

Basonat® HI ap grade are not recommended in formulations of hardener solutions containing dibutyltindilaurate DBTL or other metal catalysts.

Basonat® HI ap grade is second generation with improved stability after dilution and it is only available in Asia area.

Storage

According to our experience, Basonat® HI ap polyisocyanates can be stored for 12 months from the date of delivery if kept in tightly sealed original containers, protected from humidity at temperatures from 10 °C (50 °F) to 30 °C (86 °F). After re-filling from original containers, a shorter shelf life should be expected.

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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