

Technical Information

EVP 002505 e, April 2005

Supersedes EVP 000903 e, Rev. 1, May 2004

Page 1 of 3



® = registered trademark of
BASF Aktiengesellschaft,
unless otherwise indicated

Basonat[®] HB grades

aliphatic polyisocyanates for lightfast and weather-resistant two-pack polyurethane coatings

Nature

biurets of polyisocyanates based on hexamethylene diisocyanate

Range

Basonat [®] HB 100	solvent-free
Basonat [®] HB 175 MP/X	approx. 75 % solution in a 1:1 blend of 1-methoxy-2-propylacetate and xylene
Basonat [®] HB 275 B	approx. 75 % solution n-butyl acetate

Properties

Physical form

liquid

Shelf life

Basonat[®] HB grades are sensitive to humidity and must be stored in tightly sealed containers. In their original containers, they can be stored for at least ½ year at temperatures between 10 °C (50 °F) and 30 °C (86 °F). After re-filling from original containers, a shorter shelf life must be expected.

Product specification

	Basonat [®]		
	HB 100	HB 175 MP/X	HB 275 B
NCO content (DIN EN ISO 11909)	22–23 %	16–17 %	16–17 %
non-volatile fraction (DIN EN ISO 3251)		74–76 %	74–76 %
viscosity at 23 °C (73 °F) (DIN EN ISO 3219)	2,500–4,500 mPa·s	130–300 mPa·s	100–180 mPa·s
shear rate D	2,500 s ⁻¹	10,000 s ⁻¹	10,000 s ⁻¹
color number (DIN ISO 6271)	≤ 30	≤ 30	≤ 30

Other properties

NCO equivalent weight (quantity of Basonat [®] as supplied, containing 1 Mol active NCO)	~ 187	~ 255	~ 255
---	-------	-------	-------

Crosslinking

Basonat® HB grades are used to crosslink most hydroxy acrylic resins, e. g., Macrynal^{®1} SM grades, and hydroxy polyesters.

Diluent tolerance

Basonat® HB grades can be diluted with esters such as butyl-acetate, ketones such as methyl ethyl ketone, glycoether acetates such as methoxypropyl acetate or with aromatic hydrocarbons such as Solvesso^{®2} 100 or xylene.

Basonat® HB grades should not be diluted to a polyisocyanate fraction of less than 40 % since otherwise turbidity, flocculation and/or sedimentation may occur during storage. Storage trials must be carried out in all cases.

Application**Field of application**

Basonat® HB grades are used to formulate particularly lightfast and weather-resistant coatings. Aliphatic polyisocyanates are sometimes even used for primers for difficult substrates such as aluminum or various plastics, e. g., when composites are to be coated.

Basonat® HB 100 is used for formulating coatings in which the solvents used in Basonat® HB 175 MP/X and Basonat® HB 275 B would prove troublesome (e. g., aromatic hydrocarbons excessively solubilizing polystyrene).

Processing

Computing of the theoretical equivalent quantity of polyisocyanate required for crosslinking is shown using Basonat® HB 100 and Macrynal^{®1} SM 636. Computation formula:

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

Example: Macrynal^{®1} SM 636

non-volatile fraction (nvf)	70
OH value	135
Basonat® HB 100, NCO %	22

$$\frac{0.075 \times 70 \times 135}{22} = 32.2$$

Dosage rate for 100 g Macrynal^{®1} SM 636 as supplied:

Basonat® HB 100	32.2 g
Basonat® HB 175 MP/X	43.0 g
Basonat® HB 275 B	43.0 g

¹ registered trademark of UCB Surface Specialties

² registered trademark of Exxon Mobil Corporation

It must be ensured that any solvents, pigments or extenders etc. used are free from compounds containing active hydrogen groups, e.g., water.

Safety

Basonat® HB grades are reactive polyfunctional isocyanates containing traces of hexamethylene-1,6-diisocyanate, requiring adequate protection measures. Thus they may only be used in industrial or professional applications. They are not suitable for do-it-yourself applications.

When handling these products, advice and information given in the safety data sheet must be complied with. Further, protective and workplace hygiene measures adequate for handling chemicals must be observed.

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. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.
