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Basonat® HI 100 NG

Product Description

Basonat HI 100 NG is a solvent-free aliphatic polyisocyanate for lightfast and weather-resistant two-pack polyurethane coatings.

Key Features & Benefits

- Excellent weather and chemical resistance
- Excellent color stability in formulated automotive refinish clearcoat hardeners
- Excellent hardness/flexibility for demanding applications

Chemical Composition

Polyisocyanate based on isocyanurate-modified hexamethylene diisocyanate (HDI)

Properties

Typical Characteristics

Appearance		clear liquid
Viscosity at 23°C, 1,000 s^{-1}	cP	2,500 – 4,000
Hazen color number		≤ 40
Density at 20°C	g/cm^3, lbs/gal	~ 1.17, 9.76
NCO content	%	~ 22
NCO equivalent weight (as supplied)		~ 191

These values should not be interpreted as specifications.

Applications

Basonat HI 100 NG is used to formulate lightfast and weather-resistant coatings. Results from weathering tests show that in most cases, gloss retention is better using isocyanurates than with biurets of hexamethylene diisocyanates (Basonat HB grades). Acrylic polyols should be used for maximum weather resistance.

Basonat HI 100 NG is recommended for applications such as:

- Interior/exterior Automotive OEM or refinish applications
- Interior/exterior plastic component coating applications
- Interior/exterior general industrial metal coating applications
- Interior/exterior wood coatings for floor, furniture, or millwork applications

Diluent tolerance

Basonat HI 100 NG is solvent-free and allows for a broad range of solvent choices in formulation, such as esters, ketones, glycol ether acetates, and aromatic hydrocarbons. Only “urethane grade” solvents should be used to lessen the possibility of reacting with water. Solvents with a water content of less than 500 ppm are acceptable. Pigments, extenders, etc. used should also generally be free from compounds containing active hydrogen groups such as water, alcohols, or amines.

If diluted to a polyisocyanate fraction of less than 40%, turbidity, flocculation, and/or sedimentation may occur during storage. Storage stability trials should always be conducted.

Crosslinking

Basonat HI 100 NG can be used to crosslink most hydroxyl-functional resins such as Joncryl® acrylic polyols, Sovermol® solvent-free polyols, and hydroxyl-functional polyesters. The stoichiometric amount of Basonat polyisocyanate can be calculated from the NCO equivalent weight (mass of polyisocyanate as supplied containing 1 mol of active NCO) and the hydroxyl equivalent weight of the polyol as follows:

$$\frac{Mass\ of\ polyol\ as\ supplied}{Hydroxyl\ equivalent\ weight\ of\ polyol\ as\ supplied}\ x\ NCO\ equivalent\ weight = Mass\ of\ polyisocyanate$$

Alternatively, the stoichiometric amount of polyisocyanate required for crosslinking can also calculated using the %NCO of the polyisocyanate, the nonvolatile content of the polyol, and the OH# of polyol solids as demonstrated below:

$$\frac{0.075\ x\ [OH\ \#of\ polyol\ solids]\ x\ [\%\ nonvolatile\ content\ of\ polyol]}{[\%\ NCO\ of\ polyisocyanate]} = Mass\ of\ polyisocyanate\ per\ 100g\ polyol$$

Example

Basonat HI 100 NG and Joncryl RPD 950 AC/P

Joncryl RPD 950 AC/P:

OH number	110 mg KOH/g on polyol solids
Nonvolatile content	65%
NCO content (Basonat HI 100 NG)	22%

$$\frac{0.075\ x\ 110\ x\ 65}{22} = 24.4\ g\ Basonat\ HI\ 100\ NG\ per\ 100\ g\ Joncryl\ RPD\ 950\ AC/P$$

Safety

General

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State, and Local health and safety regulations, thorough ventilation of the workplace, good skin care practices, and wearing of protective goggles.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet for Basonat HI 100 NG.

Storage

Please refer to the “Handling and Storage of Polymer Dispersion” brochure

Important

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