



Desmodur[®] BL 3175 SN

Type	Blocked, aliphatic polyisocyanate based on HDI
Form supplied	approx. 75 % in solvent naphtha 100
Uses	In combination with Desmophen [®] grades to formulate lightfast, one-component polyurethane stoving coatings; as an additive in conventional stoving systems to improve flexibility and adhesion.

Specification Property	Value	Unit of measurement	Method
Non-volatile content (0.2 g / 60 min / 80 °C)	75 ± 2	%	DIN EN ISO 3251
Viscosity at 23 °C	3300 ± 400	mPa·s	DIN EN ISO 3219/A.3
Color value (Hazen)	≤ 60		DIN EN 1557
Free NCO content, modified	< 0.2	%	DIN EN ISO 11 909

Other data* Property	Value	Unit of measurement	Method
Blocked NCO content	approx. 11.1	%	
Viscosity at 25 °C	approx. 2800	mPa·s	DIN EN ISO 3219/A.3
Equivalent weight	approx. 378		
Flash point	approx. 45	°C	DIN 53 213/1
Density at 20 °C	approx. 1.06	g/ml	DIN EN ISO 2811

*These values provide general information and are not part of the product specification.



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Solubility / thinnability

Generally speaking, Desmodur BL 3175 SN has good compatibility with the solvents listed. However, the solutions formed must be tested for their storage stability. Desmodur BL 3175 SN can be thinned to a solids content of 40 % by wt. with ketones, esters, ether esters and aromatics. It can be thinned to a solids content of 60 % by wt. with mixtures of higher boiling aromatics such as solvent naphtha 100 and 150. Aliphatic hydrocarbons cannot be used.

Compatibility

Given equivalent crosslinking ($\text{NCO/OH} = 1.0$), Desmodur BL 3175 SN is generally compatible with Desmophen 651, 670, 680, 690, RD 181, A 160, A 265, A 365, A 450 and A 565, and with Desmophen T 1665. It can also be combined with various plasticisers, e.g. phosphoric acid, sulphonic acid, adipic acid and phthalic acid esters. The combinations should always be tested for their compatibility.

Properties / Applications

Desmodur BL 3175 SN can be used as the hardener in colorfast and weather-stable, one-component polyurethane coatings. The stoving temperature can be significantly reduced by the addition of a catalyst, e.g. dibutyltin dilaurate (DBTL), without reducing the storage stability. The product is used in high-grade industrial finishes (electrical appliances, small components, can coatings, coil coatings, etc.) and in primer surfacers and topcoats for automotive finishing. Desmodur BL 3175 SN can also be used as an additive in conventional stoving systems to improve the flexibility and adhesion. Possible stoving cycles for Desmodur BL 3175 SN combined with Desmophen 651 are:

without catalyst

160 °C	60 min
or 180 °C	15 min
or 200 °C	7 min

with catalyst

130 °C	60 min
or 150 °C	15 min
or 175 °C	7 min

Depending on the co-reactant used and the stoving time, yellowing may occur at temperatures above 160 °C. Used in coil coating systems, Desmodur BL 3175 SN crosslinks sufficiently without the addition of DBTL from a peak metal temperature of approx. 241 °C and above. With an addition of 1 % DBTL, calculated on solid resin, the same result is achieved from approx. 224 °C peak metal temperature.



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Storage

The product should be stored in sealed containers at room temperature. When stored under the proper conditions, it will remain stable for at least 6 months.

Safety

Hazards identification

Flammable. Irritating to respiratory system and skin. May cause sensitization by skin contact. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Vapors may cause drowsiness and dizziness.

The safety data sheet (028952) should be observed. This contains information on labeling, transport and storage as well as on handling, product safety and ecology.

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