

VESTANAT[®] T 1890

43.13.022e / 02.14

General description

VESTANAT[®] T 1890 is a cycloaliphatic polyisocyanate based on isophorone diisocyanate (VESTANAT[®] IPDI). It contains isocyanurate groups and has a NCO-functionality between 3 and 4. VESTANAT[®] T 1890 is available in n-butyl acetate (VESTANAT[®] T 1890 E), n-butyl acetate / Solvesso 100 = 1:2 (VESTANAT[®] T 1890 L), and Kristallöl 30 / Shellsol A* 3:1 (VESTANAT[®] T 1890 M). Each is a low to medium viscosity liquid. VESTANAT[®] T 1890 is also available as a solvent-free, solid material (product information 43.13.016e).

Specification

Property	VESTANAT T 1890 E	VESTANAT T 1890 L	VESTANAT T 1890 M	Unit	Test method
Non volatile matter	70 ± 1	70 ± 1	70 ± 1	% by wt.	DIN EN ISO 3251 (1,2-1,5g 1 h 150°C)
NCO content	12.0 ± 0.3	12.0 ± 0.3	12.0 ± 0.3	% by wt.	DIN EN ISO 11909 ASTM D 2572
Viscosity at 23 °C	0.9 ± 0.25	1.7 ± 0.4	4.0 ± 0.6	Pas	DIN EN ISO 3219

Typical data

Solvent	n-butyl acetate	n-butyl acetate/Solvesso 100* (1:2)	Kristallöl 30*/Shellsol A* (3:1)	–	–
Density at 15 °C	1.06	1.06	1.025	g/cm ³	DIN 51 757 ASTM D 2111
Colour (Hazen)	≤80	≤80	≤80	–	DIN EN ISO 6271
Flash point (closed cup)	30	41	39	°C	DIN EN ISO 1523
IPDI-monomer	≤ 0.5	≤ 0.5	≤ 0.5	% by wt.	DIN EN ISO 10 283

* see footnote on the reverse page

Properties and Applications

VESTANAT[®] T 1890 is used as a crosslinker in 2K-PUR paints based on suitable polyesters, acrylates, flexible medium-oil or short-oil alkyd resins and other resins containing OH-groups. In combination with suitable polyols, polyurethane paints with outstanding weather resistance and light fastness are obtained. By partial use of VESTANAT[®] T 1890 in 2K-PUR paints based on linear aliphatic polyisocyanates the drying performance, the surface hardness, the pot life or the chemical resistance against environmental etch can be improved.

Typical applications are automotive OEM and car repair paints, fleet coatings, maintenance coatings, etc. More information concerning the use of VESTANAT[®] T 1890 in 2K PUR paints is provided in the Product Information no. 43.13.052e. VESTANAT[®] T 1890 is also available as 100 % solids material. For further information see Product Information 43.13.016e (VESTANAT[®] T 1890/100).

VESTANAT[®] T 1890 E and VESTANAT[®] T 1890 L may be diluted with aromatics and esters to a solids content of 10 % by wt. without separation or precipitation. Diluting with mineral spirits, solids contents below 30 % by wt. should be avoided.

VESTANAT[®] T 1890 M may be diluted with aromatics and aromatics/mineral spirit mixtures (e.g. xylene/Kristallöl 21* = 1:1) to solids concentrations of 10 % by wt. without precipitation. On diluting with mineral spirits (e.g. Kristallöl 30* / Shellsol A* = 3:1) precipitation occurs at resin concentrations between 40 and 30 % by weight.

Solvents for diluting VESTANAT[®] T 1890 should in general be of urethane grade, i.e. the water content should be below 0,05 %. Also protic solvents like alcohols or amines have to be avoided.

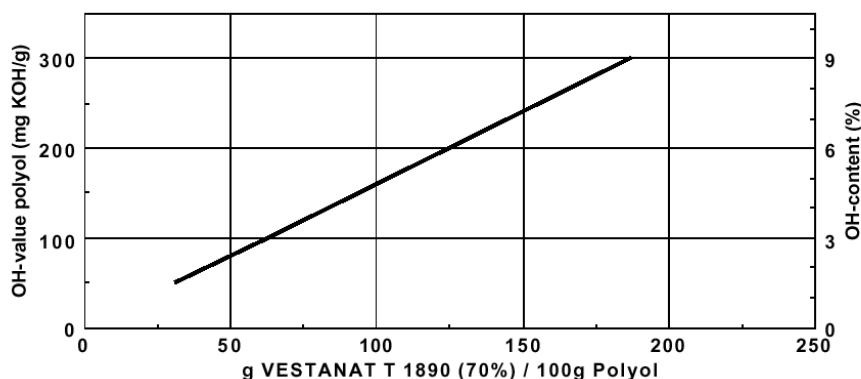
Catalysts

The basic reactivity of VESTANAT[®] T 1890 is lower compared to linear aliphatic polyisocyanates. Slow curing at ambient temperature and extremely long pot life can be a consequence of inadequate catalysis. In order to improve the reactivity, the use of tin or bismuth based catalysts are recommended. The amount to be used depends on the type and the OH-number of the resin and is typically in the range of 0.01 and 0.1 % by wt., calc. on solids. More information are available on request.

Concentration of Crosslinking Agent

The amount of VESTANAT[®] T 1890 in a 2K PUR paint is mainly depending on the hydroxyl content of the polyol. A stoichiometric crosslinking ratio of NCO : OH = 1:1 is recommended. The addition of excessive VESTANAT[®] T 1890 should be avoided, a slight under-crosslinking can be advantageous in certain applications. The diagram below gives an indication of the recommended ratios.

Ratio of VESTANAT T 1890 and polyol at a stoichiometric level of NCO : OH = 1:1



- *Kristallöl 21: mineral spirit, 19 % by wt.-aromatics, boiling range 130 – 175 °C
- *Kristallöl 30: mineral spirit, 19 % by wt.-aromatics, boiling range 145 – 200 °C
- *Shellsol A: blend of aromatics, boiling range 165 – 179 °C
- *Solvesso 100: blend of C₉-/C₁₀ aromatics, boiling range 154 – 178 °C

Storage and Packaging

VESTANAT[®] T 1890 E, -L, -M can be stored in unopened containers for at least one year without loss of quality in accordance with the above specification.

VESTANAT[®] T 1890 E and VESTANAT[®] T 1890 L are supplied in non-returnable cans of 30 kg and non returnable 200 kg drums; VESTANAT[®] T 1890 M is supplied in non-returnable cans of 25 kg and non returnable 200 kg drums.

Safety and Handling

The product is used as raw material for the industrial manufacture of resins and hardeners for coating materials, adhesives, sealants and elastomers. The handling of such materials containing reactive polyisocyanates and residual monomeric diisocyanates requires appropriate protective measures. Therefore these products may be used only in industrial or professional applications. They are not suitable for use in homemaker (DIY) applications.

Please refer to our Safety Data Sheet.

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Replaces leaflet 43.13.022e / 07.06 and all former issues
Marl, February 13, 2014

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