



Schill + Seilacher

Technical Data Sheet

STRUKSILON 8026

Silicone Stabiliser for PU–Shoe Sole Systems,
Microcellular and Rigid Foams

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Application Fields

STRUKSILON 8026 is used as a silicone stabiliser for the production of polyurethane shoe sole systems as well as other microcellular foams. It is especially recommended for shoe sole formulations based on polyester and blends of polyether/polyester polyols. STRUKSILON 8026 was specifically developed to offer excellent performance in high as well as low density systems.

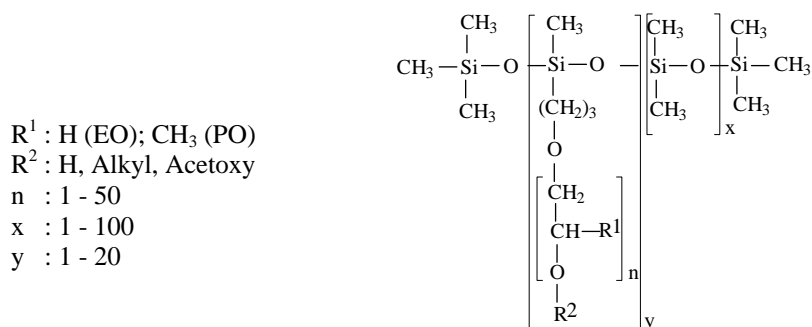
Additionally, STRUKSILON 8026 can be successfully applied in pour-in-place systems, PUR spray formulations and in a variety of continuous laminated boardstock formulations.

Chemical and Physical Properties

According to its chemical structure STRUKSILON 8026 is a polyether modified polydimethyl siloxane resistant to hydrolysis.

STRUKSILON 8026 is a clear, colourless to slightly yellow liquid of middle viscosity, has strong stabiliser properties and is miscible with water at room temperature.

General Chemical Structure



The data given are typical values which are not intended for use in preparing specifications. For test methods refer to the corresponding supplement.

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Typical Properties

Viscosity at 25°C	[mm ² /s]	350
Density at 25°C	[kg/m ³]	1071
Flash Point (DIN/ISO 2562)	[°C]	> 100
Refractive Index at 25°C		1.454

Technical Properties

STRUKSILON 8026 was specifically designed to be used in shoe sole and other microcellular systems. It is mainly recommended for polyester and polyester/polyether blend based formulations.

STRUKSILON 8026 offers an excellent regular and fine cell structure and a good skin formation. Even in low density foams skin defects and voids on or slightly under the surface can be avoided. Very low shrinkage will be observed even at short demould times using low density formulations.

Due to this outstanding performance STRUKSILON 8026 is recommended as a wide density range silicone stabiliser for all polyester polyol based shoe sole applications in formulations from 0,34 g/cm³ to 0,58 g/cm³.

Performance Test Results:

Test objective:

The test was carried out as a comparison test of Struksilon 8026 and two reference materials. The comparison material A is a silicone stabiliser mainly recommended for high density shoe sole systems. Comparison B is a stabiliser mainly recommended for low density shoe soles. The major task was to compare the influence of the stabiliser on the cell structure, the skin formation and the general processing of the systems.

Higher density:

The test for higher density was carried out in a standard polyester polyol based system. Demould densities of 0,56 g/cm³ were obtained.

General results: All three stabilisers showed an excellent skin formation, a fine cell structure and excellent processing.

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Lower density:

For the production of the lower density foams a standard shoe sole system with a demould density of 0,36 g/cm³ was chosen.

Test formulation:

polyester polyol	linear, adipic acid based, OH-value = 56 mg KOH/g	83,23
monoethyleneglycol		13,9
triethylenediamine	33,3% triethylenediamine in MEG	2,05
water	H ₂ O	0,55
silicone	silicone stabiliser	<u>0,27</u>
		100,00 parts
prepolymer	20% NCO	132 parts
free rise density:	0,21 g/cm ³	
demould density:	0,38 g/cm ³	

Processing:

prepolymer temperature:	60°C
polyol temperature:	55°C
mould temperature:	50°C
demould time:	3,5 min

The tests were carried out using a standard low pressure mixing device.

With all three materials a demould time of 3,5 min was reached.

Skin formation:

The comparative silicone stabiliser A mainly recommended for higher densities showed voids and skin defects in the majority of the produced samples.
For STRUKSILON 8026 no skin defects were observed.

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Dimensional stability:

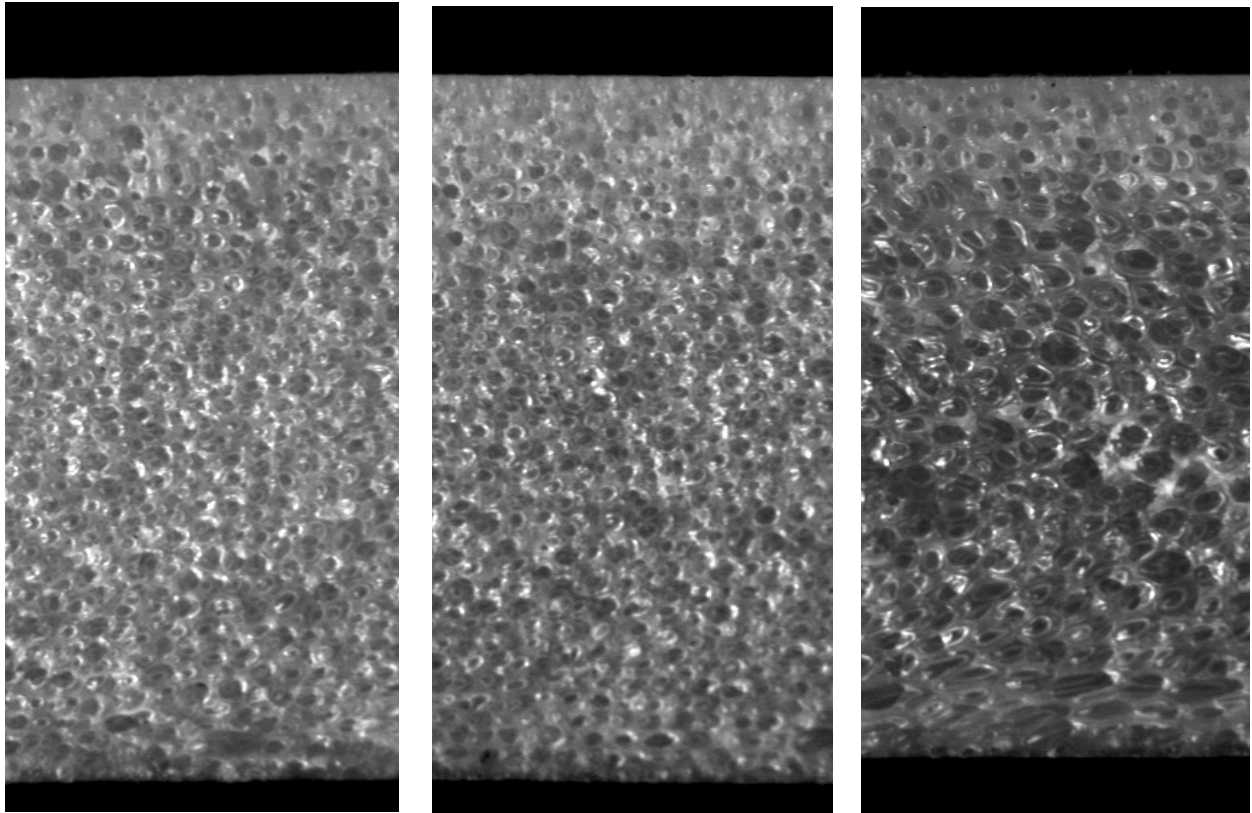
None of the samples showed a shrinkage of more than 2%.

Cell structure:

STRUKSILON 8026

Comparison B

Comparison A



STRUKSILON 8026 exhibits an excellent fine cell structure. Comparison B offers an almost identical cell structure, while comparison A shows coarse and irregular cells.

Results:

STRUKSILON 8026 is an excellent wide density range silicone stabiliser for shoe sole systems. The product allows to make shoe soles characterised by excellent cell structure, very good physical properties as well as improved processing in both, high and low density shoe sole systems.

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Recommended Dosage

Usually, STRUKSILON 8026 is applied in quantities of 0.1 to 1.0 php (parts on 100 parts polyol). We recommend to adjust the optimum dosage to the corresponding formula. However, a concentration of 2 php should not be exceeded.

Product Safety and Handling

STRUKSILON 8026 is not a hazardous material for the purposes of hazardous materials regulation.

Further information regarding safety, toxicology, special properties of the product, transport and storage are given in the safety data sheet.

Packaging, Storage and Transport

Storage stability	12 months in closed original containers if transported and stored at temperatures between 1 and 30°C.
Packaging	200 kg drums 1000 kg containers (IBC)

The suggestions for application and usage of our products as well as possible proposed formulations are meant to advise only to the best of our knowledge. This information is without obligation and does not release customers from their own testings to ensure suitability for intended processes and use. Liability is only accepted in case of intention or gross negligence. Liability for any defects caused by minor negligence are not accepted. Each producer is responsible and liable to observe legislation and patent rights of third parties.

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