



# SILICONES

POLYURETHANE ADDITIVES

# struksilon

SOLUTIONS | TAILORMADE | WORLDWIDE

## FROM HUMBLE ROOTS IN LEATHER PROCESSING CHEMICALS ...



**SCHILL+SEILACHER'S STORY BEGAN IN 1877, WHEN KARL SCHILL  
AND CHRISTOPH SEILACHER STARTED MANUFACTURING CHEMICALS  
FOR LEATHER PROCESSING IN HEILBRONN, GERMANY.**

**IN 1925 SCHILL+SEILACHER OPENED A SECOND PRODUCTION SITE**

# 1877

Following the Second World War, Schill+Seilacher moved its Heilbronn operation to Böblingen, a suburb of Stuttgart. Although both locations Hamburg and Böblingen are sharing the same name, they are serving different industries and working independently of each other. Schill+Seilacher ventured into the North American market in 1979 with the establishment of Struktol® Company of America. SCA is located at the heart of the American tire industry, just outside Akron, Ohio, and majorly supplies the plastic, rubber and tire industries. Schill+Seilacher Chemie GmbH, situated on the banks of the Elbe just south of Dresden was acquired in the early 1990s and serves as both a production and research facility for silicone based chemistry.

SNS Nanotech in Hudson, Ohio, specializes in developing complex nanofiber matrices and is the youngest member of the Schill+Seilacher Group. Their proprietary technology enables the fabrication of self-supporting mats that can entrap particles within a nanofiber matrix or encapsulate them within individual nanofibers.

# WORLDWIDE

**... TO A GLOBAL PLAYER IN THE PRODUCTION OF INDUSTRIAL PROCESS ADDITIVES.**

**IN HAMBURG TO CATER TO THE EXPANDING NEEDS OF ITS GROWING CUSTOMER BASE AND SECURE BETTER ACCESS TO INTERNATIONAL MARKETS THROUGH THE CITY'S BUSTLING PORT.**

#### **DIN EN ISO 9001: Our quality guarantee**

The high quality standard of our products is guaranteed by our certified quality management system (ISO 9001), which integrates our highly qualified application experts, state of the art laboratories and testing equipment, and modern production methods into an effective and continually improving team.

#### **DIN EN ISO 9001, DIN EN ISO 14001:**

##### **Our commitment to the environment**

Our commitment to reducing waste and managing energy consumption efficiently has been at the core of our business for many years. By helping us work more efficiently and cost effective, our ISO 14001 certification promises better products through environmental responsibility.

Specific information of site certifications can be found on page 22.

**RUBBER ADDITIVES**

**ANTIFOAMS**

**EPOXY PREPOLYMERS  
AND FLAME RETARDANTS**

**LATEX ADDITIVES**

**SILICONES**

**RELEASE AGENTS**

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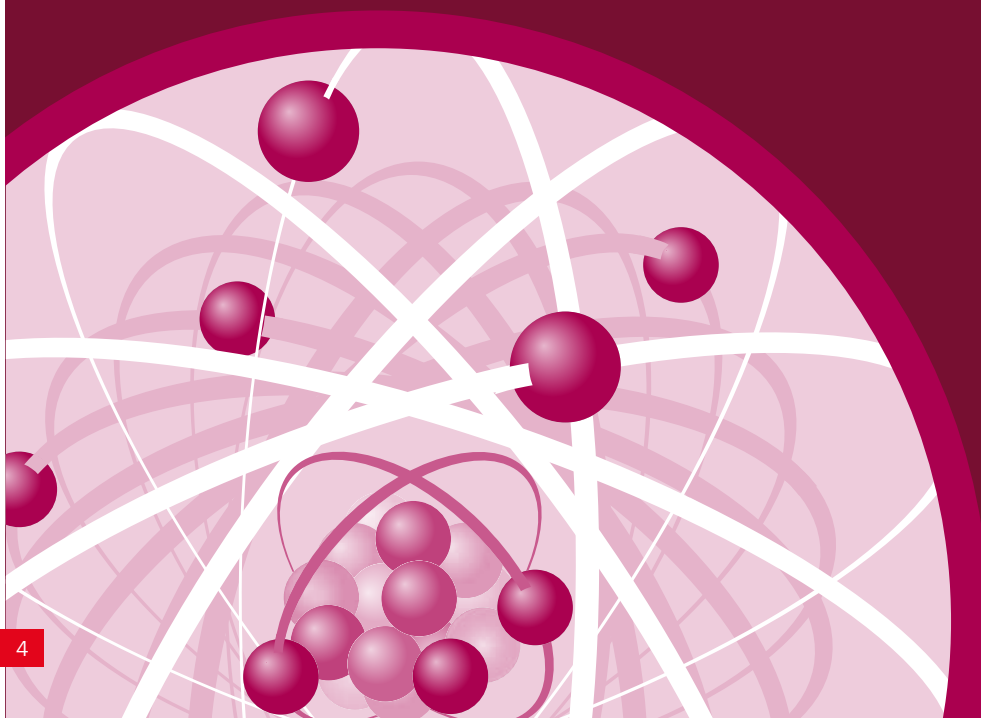
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## POLYURETHANE ADDITIVES

Wherever classic products reach their physical limits, silicones are often able to provide at least an alternative solution. Silicones are particularly advantageous because of their high temperature stability, excellent lubrication properties, soft-touch and excellent hydrophobic qualities.

Schill+Seilacher an acclaimed producer of additives and special auxiliaries is able to offer and produce customized products for a lot of applications. The use of stabilizers, catalysts and other additives offers cost efficient solutions, helping to minimize VOC emissions and optimizing the status of silicones to meet specific requirements. We respond proactively to individual demands and wishes of customers, by providing first class advice and technical support, also on-side locally. Our products fulfill the high quality demands of silicones, delivered to the Polyurethane processing industries.



# SILICONE STABILIZERS FOR POLYURETHANE

Struksilon silicone stabilizers are polyalkyleneoxide-modified polydimethylsiloxanes designed to provide benefits compared to conventional organic products. Struksilon silicone stabilizers are hydrolysable and/or non-hydrolysable and the polyether group is bound to the silicone backbone via Si-C or an Si-O-C linkage. These products have a non-ionic character. They differ in the siloxane and polyether chain lengths; the degree of functionalization; the ethylene oxide content and the polyether capping group. By careful controlling all these parameters, our products are designed to be used as stabilizing agents in polyurethane rigid as well as flexible foams.

## POLYURETHANE RIGID FOAM ONE AND TWO COMPONENT SPRAY FOAM

### Struksilon

|      | 1 Component Foam |          | 2 Component Foam |                     |             |
|------|------------------|----------|------------------|---------------------|-------------|
|      | STRAW FOAM       | GUN FOAM | PURE WATER BLOWN | HFC OR COMBINATIONS | IMPROVED FR |
| 8002 | ✓✓✓              | ✓        |                  |                     |             |
| 8006 | ✓✓               | ✓✓✓      |                  |                     |             |
| 8008 | ✓✓               | ✓✓✓      |                  |                     |             |
| 8020 |                  |          | ✓                | ✓✓✓                 | ✓           |
| 8023 |                  |          | ✓✓✓              | ✓                   | ✓           |
| 8026 |                  |          | ✓✓               | ✓✓                  | ✓✓✓         |
| 8101 | ✓✓               | ✓✓✓      |                  |                     |             |

✓✓✓ EXCELLENT    ✓✓ VERY GOOD    ✓ GOOD

# SILICONE STABILIZERS FOR 1-COMPONENT FOAM (OCF)



## Struksilon 8002

- Main application in straw foam
- For all kinds of blowing agents
- Excellent performance in winter foam formulations
- No impact on shelf life time

## Struksilon 8006

- Gun and straw foam
- Excellent nucleation with optimized cell structure
- Good dimensional stability/low shrinkage
- Also very good in combination with additional cell openers

## Struksilon 8008

- Gun and straw foam
- High nucleation with low shrinkage
- Good foam stabilization
- Excellent dimensional stability

## Struksilon 8101

- Gun, mainly straw foam
- Mainly for formulations with propane/butane/DME and their mixtures with 134a
- Good nucleation, stabilization and dimensional stability
- High foam yield

# SILICONE STABILIZERS FOR 2-COMPONENT SPRAY FOAM

## Struksilon 8020

- For 2-component spray foam
- Good blowing agent emulsification
- Improves compatibility to various different polyols
- Low density foams

## Struksilon 8023

- Mainly for roof-spray
- Excellent in only water blown formulations
- Suitable for 141b and new HFC blowing agents
- Excellent thermal insulation

## Struksilon 8026

- For all 2-component spray foams
- Reduced shrinkage
- Good FR-performance
- Suitable for all blowing agents





# THERMAL INSULATION AND APPLIANCE APPLICATIONS

## Struksilon

|      | OPTIMUM FLOW | OPTIMUM LAMBDA | CYCLO PENTANE | CYCLO/ISO PENTANE | IMPROVED SURFACE |
|------|--------------|----------------|---------------|-------------------|------------------|
| 8024 | ✓✓✓          | ✓✓✓            | ✓✓            | ✓✓✓               | ✓✓               |
| 8033 | ✓✓✓          | ✓✓✓            | ✓✓✓           | ✓                 | ✓✓               |
| 8061 | ✓✓           | ✓✓             | ✓✓✓           | ✓✓✓               | ✓✓✓              |

✓✓✓ EXCELLENT    ✓✓ VERY GOOD    ✓ GOOD

## SILICONE STABILIZERS FOR THERMAL INSULATION AND APPLIANCE APPLICATIONS

### Struksilon 8024

- Mainly for appliance applications
- Improved cyclo/iso pentane compatibility
- Excellent flow
- Uniform cell structure for optimized insulation properties

### Struksilon 8033

- Appliance application
- Very good foam flow, thermal conductivity and demolding properties
- Excellent cyclo pentane compatibility

### Struksilon 8061

- For all pentane blown appliance applications
- Perfect surface quality
- Good flowability, insulation properties and compressive strength distribution

# CONTINUOUS PANEL PRODUCTION

| Struksilon |     |     |                        |                     |                        |              |                 |             |
|------------|-----|-----|------------------------|---------------------|------------------------|--------------|-----------------|-------------|
|            | PUR | PIR | PENTANE EMULSIFICATION | IMPROVED INSULATION | HIGH POLYESTER CONTENT | METAL FACING | FLEXIBLE FACING | IMPROVED FR |
| 8007       | ✓   | ✓✓✓ | ✓✓✓                    | ✓✓                  | ✓✓✓ <sup>2</sup>       | ✓✓✓          |                 | ✓           |
| 8020       | ✓✓✓ | ✓   | ✓✓                     | ✓✓                  | ✓ <sup>1</sup>         | ✓            | ✓✓              |             |
| 8026       | ✓✓  | ✓✓  | ✓                      | ✓                   | ✓✓ <sup>1+2</sup>      | ✓✓           | ✓✓              | ✓✓✓         |
| 8031       | ✓✓✓ | ✓✓✓ | ✓✓                     | ✓✓✓                 | ✓ <sup>1</sup>         |              | ✓✓✓             | ✓           |
| 8032       | ✓✓✓ | ✓✓✓ | ✓✓✓                    | ✓✓✓                 | ✓✓✓ <sup>1</sup>       | ✓            | ✓✓✓             | ✓           |
| 8034       | ✓✓  | ✓✓  | ✓✓                     | ✓✓                  | ✓✓ <sup>1</sup>        |              | ✓✓              |             |
| 8041       | ✓✓  | ✓✓  | ✓✓                     | ✓✓✓                 |                        | ✓✓✓          |                 |             |
| 8042       | ✓   | ✓✓✓ | ✓✓                     | ✓✓                  | ✓✓✓ <sup>2</sup>       | ✓✓           | ✓✓              |             |
| 8061       | ✓✓  | ✓✓  | ✓✓                     | ✓✓✓                 | ✓✓ <sup>1</sup>        | ✓✓✓          | ✓               |             |

1 PSA – Phtalic Anhydride based  
 2 PET – Polyethylenteraphthalate based

✓✓✓ EXCELLENT    ✓✓ VERY GOOD    ✓ GOOD

## CONTINUOUS PANEL PRODUCTION

### Struksilon 8007

- Mainly for pentane based PIR foams
- Excellent performance in formulations with high polyester polyol content
- Suitable for metal faced panels
- Excellent for Biopolyols

### Struksilon 8020

- Used for CLBS
- Mainly for PUR-foam
- Wide production window

### Struksilon 8026

- Standard product for all types of panel production
- Especially for foam with high FR requirements

# SILICONE STABILIZERS FOR CONTINUOUS PANEL PRODUCTION

## Struksilon 8031

- Continuous PIR and PUR panel production
- Improved insulation properties
- Mainly for flexible facings

## Struksilon 8032

- Pentane blown continuous PIR and PUR panel
- Especially high pentane level formulations
- Usable for panels with high thickness
- Excellent emulsification for PSA based polyols

## Struksilon 8034

- Pentane blown continuous PIR panel production
- Good insulation
- Mainly for PSA polyol based PIR foams

## Struksilon 8041

- Metal faced panels
- Suitable for PUR continuous panels
- Excellent adhesion between metal surfaces and foam

## Struksilon 8042

- Used for CLBS
- Mainly for high speed, high index PIR-foam
- Very good performance in formulations with high loads of PET based polyester polyols
- Biopolyol compatible

## Struksilon 8061

- Metal faced panels
- Suitable for PIR/PUR continuous panels
- Excellent adhesion between metal surfaces and foam
- Very good insulation

# DISCONTINUOUS PANEL/PIPE/POUR IN PLACE

## Struksilon

|      | OPTIMUM FLOW | OPTIMUM LAMBDA | CYCLO PENTANE | CYCLO/ISO PENTANE | IMPROVED FR | HIGH/ONLY WATER BLOWN |
|------|--------------|----------------|---------------|-------------------|-------------|-----------------------|
| 8020 | ✓✓           | ✓✓             | ✓✓            | ✓✓                |             | ✓✓                    |
| 8024 | ✓✓✓          | ✓✓✓            | ✓✓            | ✓✓✓               |             | ✓✓                    |
| 8026 | ✓✓           | ✓              | ✓             | ✓                 | ✓✓✓         | ✓✓                    |
| 8030 | ✓✓           | ✓✓             |               |                   |             | ✓✓✓                   |
| 8033 | ✓✓✓          | ✓✓✓            | ✓✓✓           | ✓✓                |             | ✓                     |

✓✓✓ EXCELLENT    ✓✓ VERY GOOD    ✓ GOOD

## SILICONE STABILIZERS FOR DISCONTINUOUS PANEL, PIPE INSULATION AND POUR IN PLACE

### Struksilon 8020

- Good standard stabilizer for most formulations
- Excellent pentane compatibility
- Good flowability

### Struksilon 8024

- Excellent insulation value and very good flowability
- Very good compatibility with n/iso and cyclo-pentane
- Also good performance in all water blown formulations

## DISCONTINUOUS PANEL/PIPE/POUR IN PLACE



### Struksilon 8026

- Standard product for all types of panel productions
- General stabilizer for a wide range of FR rigid foam
- Reduced smoke

### Struksilon 8030

- Mainly for water and water co-blown systems
- Good insulation
- Isocyanate compatible

### Struksilon 8033

- Excellent cyclo/iso- or cyclo-pentane compatibility
- Very good foam flow and thermal conductivity
- Improved demolding properties

# MICROCELLULAR FOAM



## STABILIZERS FOR POLYURETHANE MICROCELLULAR FOAM

### Struksilon 8018

- High efficiency, mainly for polyester and/or polyether shoe sole formulations
- Very fine cell structure
- Used in middle to high densities

### Struksilon 8026

- Mainly for polyester shoe sole formulations
- Excellent skin formation
- Also suitable for lower density formulations
- Reduced shrinkage

## CELL REGULATOR FOR POLYURETHANE MICROCELLULAR FOAM

### Struksilon L 20.000

- Cell regulator for PU shoe sole systems based on polyester polyols
- Based on modified silicone fluid

## RELEASE AGENTS FOR PU

### Struksilon PUR 107

- Release agent concentrate for PU shoe soles
- Based on a reactive silicone compound

### Struksilon E 376

- Concentrated slip additive for release agent formulations used in molded foam
- Based on a reactive silicone fluid





## SILICONE STABILIZERS FOR CONVENTIONAL FLEXIBLE FOAM

### Struksilon 8182

- Conventional flexible slabstock and box foam (Very low to middle density)
- High foam yield

### Struksilon 8183

- Conventional flexible slabstock and box foam (Extremely low to middle density)
- Highest foam yield

### Struksilon 8184

- Conventional flexible slabstock and box foam (low to high density)
- Middle to high potency



## Struksilon 8141

- Conventional and liquid CO2 blown flexible slabstock foam
- Very high open cell content even at high densities
- Wide processing window
- Low/medium potency

## Struksilon 8143

- Conventional and liquid CO2 blown flexible slabstock foam
- Higher open cell content
- Suitable also for lower density foams
- Wide processing window
- Medium potency

## Struksilon 8146

- Conventional flexible slabstock and box foam
- Suitable also for low density foams
- Wide processing window
- Medium/high potency

## Struksilon 8147

- Conventional flexible slabstock and box foam
- Suitable also for very low density foams
- Wide processing window
- High potency

## SILICONE ADDITIVE FOR HR SLABSTOCK FOAM

### Struksilon 8204

- High efficiency
- Excellent balance and cell regulating
- Suitable for TDI and MDI based foams
- Can be combined with all common polymer polyols
- Very low contribution to VOC

# CATALYSTS



**Struksilon polyurethane catalysts are used in the production of polyurethanes and to control crosslinking and blowing reaction.**

## CATALYST FOR FLEXIBLE SLABSTOCK FOAM

### Struksilon BD 70

- Blowing catalyst for flexible, semi-rigid and rigid foam
- Bis (dimethylaminoethyl)ether 70 % in DPG

### Struksilon Amine 33

- Catalyst for all kinds of polyurethane foams
- Solution of 33.3 % Triethanoldiamine in Dipropylene-glycol

### Struksilon Sn 9

- Catalyst for flexible PU foam
- Tin (II) Octoate

## SPECIALTY AMINE CATALYST

### Struksilon DMDEE

- Selective blowing catalyst for one component foam
- CASE applications

In the polyurethane industry catalysts have to work with complex requirements for an increasing range of applications. The demanding Industry is looking beside the technical behavior, especially for products which fulfill the rules of environmental compatibility and lowest possible toxicity. Schill+Seilacher, one of the leading trimerisation catalyst manufacturers in the world is able to supply a big variety of these products. Further we are able to design mixtures based on customer requirements.

## TRIMERISATION CATALYST

### Struksilon KOCT 10

- Trimerisation catalyst with lower Potassium content and elevated amount of water
- Potassium Octoate (10 % Potassium content, diluted in DEG)

### Struksilon KOCT 15

- Standard trimerisation catalyst for rigid PIR foam
- Potassium Octoate (15 % Potassium content, diluted in DEG)

### Struksilon KOCT 15 LV

- Trimerisation catalyst for rigid PIR foam
- Reduced viscosity for better handling
- Potassium Octoate (15 % Potassium content, diluted in MEG)

### Struksilon KOCT 14 RO

- Trimerisation catalyst for rigid PIR foam
- With strong reduced hydroxyl content
- Reduction of isocyanate consumption, esp. in high index application
- Potassium Octoate (14 % Potassium content, diluted in glycols with low OH value)

# CATALYSTS



## Struksilon KOA 64

- Trimerisation catalyst mixture for rigid PIR foam
- Mixture 60 % Potassium Octoate and 40 % Potassium Acetate diluted in DEG

## Struksilon KOA 82 LV

- Trimerisation catalyst mixture for rigid PIR foam
- Reduced viscosity for better handling
- Mixture 80 % Potassium Octoate and 20 % Potassium Acetate diluted in MEG

## Struksilon KAC 12

- Trimerisation catalyst for rigid PIR foam
- Potassium Acetate (Potassium content 12 %, diluted in DEG)

## Struksilon KAC 15

- Trimerisation catalyst for rigid PIR foam
- Potassium Acetate (Potassium content 15 %, diluted in MEG)

## Struksilon KPROP 14

- New generation
- Trimerisation catalyst mixture for rigid PIR foam
- Potassium Propionate (14 % Potassium content, diluted in glycols)



# SCHILL+SEILACHER AT A GLANCE

## → HAMBURG

### SPECIALITY CHEMICALS FOR:

DIN EN ISO 9001:2015  
DIN EN ISO 14001:2015  
DIN EN ISO 500001:2011

RUBBER ADDITIVES  
ANTIFOAMS  
EPOXY PREPOLYMERS  
AND FLAME RETARDANTS  
LATEX ADDITIVES  
SILICONES  
RELEASE AGENTS



## → STOW / OHIO / USA

### SPECIALITY CHEMICALS FOR:

DIN EN ISO 9001:2008

PLASTICS  
WOOD COMPOSITES  
RUBBER  
LEATHER



## → BOEBLINGEN

### SPECIALITY CHEMICALS FOR:

DIN EN ISO 9001:2015  
DIN EN ISO 14001:2015  
DIN EN ISO 500001:2011  
RSPO CERTIFICATION MASS BALANCE

FIBRES  
TEXTILES  
LEATHER  
PAPER  
COSMETICS  
FINE CHEMICALS



## → PIRNA

### SPECIALITY CHEMICALS FOR:

DIN EN ISO 9001:2015  
(ONLY FOR BOEBLINGEN PRODUCTS)

SILICONES  
PU INDUSTRY  
PAPER  
TEXTILES  
COSMETICS



## → HUDSON / OHIO / USA PRODUCER OF:

DIN EN ISO 9001:2015  
DIN EN ISO 13485:2003

NANOFIBRE MATRICES



**We at Schill+Seilacher "Struktol" GmbH have met all our REACH registration obligations for 2010 and 2013. We are still active in our consortia and have begun preparations for the 2018 deadline. We also work closely with our suppliers to make sure that all our raw materials are also REACH compliant. For further information, please contact our Regulatory Affairs Department at [REACH@struktol.de](mailto:REACH@struktol.de)**

**[WWW.STRUKTOL.DE](http://WWW.STRUKTOL.DE)**

**Disclaimer:**

**The mentioned attributes and application proposals are only non-binding application possibilities and application proposals for our products. Our advice and recommendations whether verbal, in writing or by way of tests do not excuse the customer from his or her own examination regarding the applicability for the intended procedures and purposes. The mentioned attributes and application proposals are no assurance for a certain further processing. Any assurances must be agreed upon explicitly and in writing between the customer and us.**

**We also advice you, that any further processing and the distribution of the further processed products is part of the customers sole scope of responsibilities as the producer of the new product.**

**Schill+Seilacher**

**Any Questions?**

Our service team will be pleased to answer any questions and to assist you with advice and information at all times. We can also advise you of the contact data of our local offices and agencies. Data sheets and samples of our products are available upon request.

For more information please contact:

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