Safety Data Sheet
according to Regulation (EC) No 1907/2006

SiliXan Cat 100
Product code: 17041310

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
SiliXan Cat 100
Product group: Zulieferprodukt
Abbreviation: -
REACH Registration Number: -
CAS No: -
Index No: -
EC No: -

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture
ADDITIVE, CATALYST

1.3. Details of the supplier of the safety data sheet

tradeperson
Company name: SiliXan GmbH
Street: Theodor-Heuss-Str. 11a
Place: D-66130 Saarbrücken
Telephone: 0049 681 876105 23 Telefax: 0049 681 876105 31
e-mail: info@siliXan.de
Contact person: Dr. Frank Groß
Telephone: 0151 42551255
e-mail: frank.gross@siliXan.de
Internet: www.siliXan.de

Manufacturer:
Company name: NANO-X GMBH
Street: Theodor-Heuss-Str. 11a
Place: D-66130 Saarbrücken
Telephone: +49 (0)68195940 0
e-mail: sdb@nano-x.de
Contact person: Cathrin Anne Lang
Telephone: 0049 (0)68195940 45
e-mail: lang@nano-x.de
Internet: www.nano-x.de
Responsible Department: NANO-X GmbH

1.4. Emergency telephone number:
bei Vergiftung:Giftnformationszentrum Mainz +49 (0)6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Indications of danger: Xi - Irritant
R phrases:
Flammable.
Irritating to eyes and respiratory system.
Vapours may cause drowsiness and dizziness.

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hazard categories:
2.2. Label elements

Hazardous components which must be listed on the label
butan-2-ol, acetylacetone, pentane-2,4-dione

Signal word: Warning
Pictograms: GHS02-GHS07

Hazard statements
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special labelling of certain mixtures
10 % of the mixture consists of ingredient(s) of unknown acute toxicity.
Caution — substance not yet tested completely.
For use in industrial installations or professional treatment only.

SECTION 3: Composition/information on ingredients

3.1. Mixtures

Chemical characterization
organo-metallic complex

Sum formula: -
Molecular weight: -
Hazardous components

<table>
<thead>
<tr>
<th>EC No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No</td>
<td>Classification according to Directive 67/548/EEC</td>
<td></td>
</tr>
<tr>
<td>Index No</td>
<td>Classification according to Regulation (EC) No. 1272/2008 [CLP]</td>
<td></td>
</tr>
<tr>
<td>REACH No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>201-158-5</td>
<td>butan-2-ol</td>
<td>85 - &lt; 90 %</td>
</tr>
<tr>
<td>78-92-2</td>
<td>Xi - Irritant R10-36/37-67</td>
<td></td>
</tr>
<tr>
<td>603-127-00-5</td>
<td>Flam. Liq. 3, Eye Irrit. 2, STOT SE 3, STOT SE 3; H226 H319 H335 H336</td>
<td></td>
</tr>
<tr>
<td>204-634-0</td>
<td>acetylaceton, pentane-2,4-dione</td>
<td>1 - &lt; 5 %</td>
</tr>
<tr>
<td>123-54-6</td>
<td>Xn - Harmful R10-22</td>
<td></td>
</tr>
<tr>
<td>606-029-00-0</td>
<td>Flam. Liq. 3, Acute Tox. 4; H226 H302</td>
<td></td>
</tr>
</tbody>
</table>

Full text of R-, H- and EUH-phrases: see section 16.

Further Information

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Take off immediately all contaminated clothing. Move victim to fresh air. Instruct person to keep calm and warm. If victim is at risk of losing consciousness, position and transport on their side.

After inhalation
Provide fresh air. Consult physician if problems persist.

After contact with skin
Take off immediately all contaminated clothing. After contact with skin, wash immediately with: Water and soap.

After contact with eyes
If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

After ingestion
Consult physician. Make affected person vomit if conscious.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

Nature of Hazard: Milk or fat oils and are strongly contraindicated. Caution if victim vomits: Risk of aspiration!
Treatment: Following swallowing of paraffin-oil carry out stomach pumping with animal charcoal addition agent.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Atomized water. alcohol resistant foam. dry extinguishing powder. Carbon dioxide (CO2).

Extinguishing media which must not be used for safety reasons
High power water jet.

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: Carbon monoxide., Al2O3, Carbon dioxide.
5.3. Advice for firefighters
In case of fire: Wear self-contained breathing apparatus. Full protective suit.
Additional information
Vapours are heavier than air and will spread at floor level. In case of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.2. Environmental precautions
Do not empty into drains or the aquatic environment. In case of gas being released or leakage into waters, ground or the drainage system, the appropriate authorities must be informed. Ventilate affected area.

6.3. Methods and material for containment and cleaning up
Clean contaminated articles and floor according to the environmental legislation.
Suitable absorbing material: Universal binding agent.
Ventilate affected area.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
If suction of the immediate vicinity is impossible or insufficient, the entire working place must be sufficiently ventilated using appropriate machines. Handle and open container with care. It is recommended to organize all working processes in order to exclude the following: inhalation. skin contact. Eye contact.

Advice on protection against fire and explosion
Concentrated vapours are heavier than air. Vapours may form explosive mixtures with air. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

Further information on handling
Keep in a cool, well-ventilated place.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels
Keep container tightly closed in a cool, well-ventilated place. Ensure the grounding of containers, apparatus, pumps and suction equipment.
Protect against: heat, frost, moisture, flame

Advice on storage compatibility
No data available

Further information on storage conditions
storage temperature: 5-25 °C

7.3. Specific end use(s)
No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Safety Data Sheet
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Product code: 17041310

Print date: 05.06.2015
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Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-92-2</td>
<td>Butan-2-ol</td>
<td>100</td>
<td>308</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150</td>
<td>462</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Additional advice on limit values
No data available

8.2. Exposure controls

Occupational exposure controls
If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn. In the immediate working surroundings there must be: Emergency spray installed. provide eye wash and label its location conspicuously.

Protective and hygiene measures
It is recommended to organize all working processes in order to exclude the following: inhalation, skin contact. Eye contact. After work, wash hands and face.

Respiratory protection
Wear respiratory protection when in the presence of vapour, dust, and aerosols. Filter respirator (full mask or mouth-piece) with filter: Manufacturer. 3M Art. Nr. 6800S (special filter for organic and inorganic gases and aerosols, 3M Art. Nr. ABEK1, particle filter for fine dust or dangerous aerosols 3M P3 Art.Nr. 5935)

Hand protection
Protect skin by using skin protective cream. Tested protective gloves are to be worn: Suitable material: NBR (Nitrile rubber). Butyl rubber. FKM (fluororubber).

Eye protection
Tightly sealed safety glasses.

Skin protection
Lab apron.

Environmental exposure controls
refer to Chap. 5 and 6

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour:</td>
<td>slightly yellow</td>
</tr>
<tr>
<td>Odour:</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

Test method
~ 8,5  DIN 19261

Changes in the physical state

Melting point: No data available
Initial boiling point and boiling range: not determined
Flash point: 29 °C  ISO 3679
Lower explosion limits: not determined
Upper explosion limits: not determined
Ignition temperature: not determined
Vapour pressure: not determined
Density: 0.9 g/cm³  DIN 12791
Water solubility: not miscible
Viscosity / dynamic: 13 - 34 mPa·s  ISO 2555
(at 22 °C)
Flow time: 25 s (3 mm)  3 DIN 53211
(at 22 °C)

### 9.2. Other information
Solid content: ~ 10 %

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity
No data available

#### 10.2. Chemical stability
stable at room temperature

#### 10.3. Possibility of hazardous reactions
No data available

#### 10.4. Conditions to avoid
Keep only in the original container at temperature not exceeding 30 °C. Avoid contact with heat sources.

#### 10.5. Incompatible materials
Avoid the exposition with alkali and acids.

#### 10.6. Hazardous decomposition products
No data available

### Further information
Even after use and until complete evaporation of the flammable components, there is still a danger of an explosive steam-air mixture forming.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

**Toxicokinetics, metabolism and distribution**
No data available

**Acute toxicity**
No data available
If there are no test datas available, the formulation have to be evaluated according to the conventional method of the preparing guideline 1999/45/EG and classified after toxicological dangers. See to chapter 2 and 15.

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure routes</th>
<th>Method</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-92-2</td>
<td>butan-2-ol</td>
<td>oral</td>
<td>LD50</td>
<td>2190 mg/kg</td>
<td>Rat</td>
<td>GESTIS</td>
</tr>
<tr>
<td>123-54-6</td>
<td>acetylacetone, pentane-2,4-dione</td>
<td>oral</td>
<td>LD50</td>
<td>55 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>788 mg/kg</td>
<td>rabbit</td>
<td></td>
</tr>
</tbody>
</table>

**Specific effects in experiment on an animal**
No data available
Irritation and corrosivity
No data available

Sensitising effects
No data available

Severe effects after repeated or prolonged exposure
No data available

Carcinogenic/mutagenic/toxic effects for reproduction
No data available

Additional information on tests
No data available

Empirical data on effects on humans
Inhalation causes narcotic effects/intoxication.
No data available

Further information
See protective measures under point 7 and 8.

SECTION 12: Ecological information

12.1. Toxicity
No data available

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Method</th>
<th>Dose</th>
<th>h Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-92-2</td>
<td>butan-2-ol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>3670 mg/l</td>
<td>96 h Pimephales promelas</td>
<td>GESTIS</td>
</tr>
<tr>
<td>123-54-6</td>
<td>acetylacetone, pentane-2,4-dione</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>107 mg/l</td>
<td>96 h Onchorhynchus mykiss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>175 mg/l</td>
<td>48 h Daphnia magna</td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
No data available

Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-92-2</td>
<td>butan-2-ol</td>
<td>0,65</td>
</tr>
<tr>
<td>123-54-6</td>
<td>acetylacetone, pentane-2,4-dione</td>
<td>0,4</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
No data available

Further information
No data available
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal number of waste from residues-unused products
080111 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU and removal of paint and varnish; waste paint and varnish containing organic solvents or other dangerous substances
   Classified as hazardous waste.

Waste disposal number of used product
080111 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU and removal of paint and varnish; waste paint and varnish containing organic solvents or other dangerous substances
   Classified as hazardous waste.

Waste disposal number of contaminated packaging
150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances
   Classified as hazardous waste.

Contaminated packaging
   Completely emptied packings can be re-cycled.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: 1120
14.2. UN proper shipping name: BUTANOLS
14.3. Transport hazard class(es): 3
14.4. Packing group: III
   Hazard label: 3
   Classification code: F1
   Limited quantity: 5 L
   Transport category: 3
   Hazard No: 30
   Tunnel restriction code: D/E

Inland waterways transport (ADN)

14.1. UN number: 1120
14.2. UN proper shipping name: BUTANOLS
14.3. Transport hazard class(es): 3
14.4. Packing group: III
   Hazard label: 3
Classification code: F1
Limited quantity: 5 L

Marine transport (IMDG)
14.1. UN number: 1120
14.2. UN proper shipping name: BUTANOLS
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label:

Special Provisions: 223
Limited quantity: 5 L
EmS: F-E, S-D

Air transport (ICAO)
14.1. UN number: 1120
14.2. UN proper shipping name: BUTANOLS
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label:

Special Provisions: A3
Limited quantity Passenger: 10 L
IATA-packing instructions - Passenger: 355
IATA-max. quantity - Passenger: 60 L
IATA-packing instructions - Cargo: 366
IATA-max. quantity - Cargo: 220 L

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information
1999/13/EC (VOC): ~ 90% berechnet

National regulatory information
Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.
Water contaminating class (D): 1 - slightly water contaminating

15.2. Chemical safety assessment
Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms
www.wikipedia.com

Relevant R-phrases (Number and full text)
10 Flammable.
SiliXan Cat 100

Print date: 05.06.2015
Product code: 17041310

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>36/37</td>
<td>Irritating to eyes and respiratory system.</td>
</tr>
<tr>
<td>67</td>
<td>Vapours may cause drowsiness and dizziness.</td>
</tr>
</tbody>
</table>

**Relevant H- and EUH-phrases (Number and full text)**

- **H226** Flammable liquid and vapour.
- **H302** Harmful if swallowed.
- **H319** Causes serious eye irritation.
- **H335** May cause respiratory irritation.
- **H336** May cause drowsiness or dizziness.

**Further Information**

The information contained herein is based on the present state of our knowledge. It characterizes the product/composition with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product. Any liability for damages, which occur in case of improper use or contact with the product/composition is excluded.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*