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

1.1. Product identifier

SiliXan Cat 200

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

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

e-mail: lang@nano-x.de

Internet: www.nano-x.de

1.4. Emergency telephone number:

bei Vergiftung: Giftinformationszentrum Mainz +49 (0)6131 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Indications of danger: Highly flammable, Irritant

R phrases:

Highly flammable.

Irritating to eyes.

Vapours may cause drowsiness and dizziness.

GHS classification

Hazard categories:

Flammable liquid: Flam. Liq. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements:

Highly flammable liquid and vapour.

Causes serious eye irritation.

May cause drowsiness or dizziness.

2.2. Label elements

Hazardous components which must be listed on the label

propan-2-ol; isopropyl alcohol; isopropanol
2-methylpropan-1-ol; iso-butanol

Signal word: Danger
Pictograms:

GHS02-GHS05-GHS07

Hazard statements

H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P310 Immediately call a POISON CENTER or doctor/physician.
P305 IF IN EYES:
P310 Use explosion-proof electrical/ventilating/lighting equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P304+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P235 Keep cool.

Special labelling of certain mixtures

Contains 35 % of components with unknown hazards to the aquatic environment.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

acid.

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>200-661-7</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>40 - 45 %</td>
</tr>
<tr>
<td>67-63-0</td>
<td>F - Highly flammable, Xi - Irritant</td>
<td>R11-36-67</td>
</tr>
<tr>
<td>603-117-00-0</td>
<td>Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336</td>
<td></td>
</tr>
<tr>
<td>201-148-0</td>
<td>2-methylpropan-1-ol; iso-butanol</td>
<td>30 - 35 %</td>
</tr>
<tr>
<td>78-83-1</td>
<td>Xi - Irritant</td>
<td>R10-37/38/41-67</td>
</tr>
<tr>
<td>603-108-00-1</td>
<td>Flam. Liq. 3, STOT SE 3, Skin Irrit. 2, Eye Dam. 1, STOT SE 3; H226 H335 H315 H318 H336</td>
<td></td>
</tr>
</tbody>
</table>

Full text of R and H 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 dioxide (CO2).
Carbon monoxide.
The thermal decomposition may lead to the formation of irritating vapour or gases and/or fire.

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

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>78-83-1</td>
<td>2-Methylpropan-1-ol</td>
<td>50</td>
<td>154</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75</td>
<td>231</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>67-83-0</td>
<td>Propan-2-ol</td>
<td>400</td>
<td>999</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500</td>
<td>1250</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Additional advice on limit values
DNEL/DMEL and PNEC values
DNEL: 888 mg/kg (production, dermal.)
DNEL: 500 mg/kg (production, inhalation.)
PNEC: 28 mg/kg Boden
PNEC: 552 mg/kg Meerwassersediment
PNEC: 552 mg/kg Süßwassersediment
PNEC: 140,9 mg/kg Meerwasser
PNEC: 140,9 mg/kg Frischwasser
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: Butyl rubber. (> 0,7 mm, > 480 min)

**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>Property</th>
<th>Value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>slightly yellow</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>alcoholic</td>
<td></td>
</tr>
<tr>
<td>pH-Value</td>
<td>7</td>
<td>DIN 19261</td>
</tr>
</tbody>
</table>

**Changes in the physical state**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>not determined</td>
</tr>
<tr>
<td>Boiling point</td>
<td>82 - 108 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>12 °C</td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>not determined</td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>not determined</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Density</td>
<td>0,87 g/cm³</td>
</tr>
<tr>
<td>Water solubility</td>
<td>miscible</td>
</tr>
<tr>
<td>Viscosity / dynamic</td>
<td>~ 5 mPa·s</td>
</tr>
<tr>
<td>Flow time</td>
<td>not determined</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid content</td>
<td>~ 25 %</td>
</tr>
</tbody>
</table>
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. Keep away from heat.

10.5. Incompatible materials
Keep away from strong acids, leachates, heavy metal salts and reducing materials.

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

Toxicocinetics, 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>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>oral</td>
<td>LD50</td>
<td>5000 mg/kg</td>
<td>Ratte</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td></td>
<td>12800 mg/kg</td>
<td>Kaninchen</td>
<td></td>
</tr>
<tr>
<td>78-83-1</td>
<td>2-methylpropan-1-ol; iso-butanol</td>
<td>oral</td>
<td>LD50</td>
<td>&gt; 2830 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>&gt; 24 mg/l</td>
<td>Rat</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

Empirical data on effects on humans
Inhalation causes narcotic effects/intoxication.

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>Aquatic toxicity</th>
<th>Method</th>
<th>Dose</th>
<th>h</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>1330000 - 1520000 mg/l</td>
<td>96</td>
<td>Oncorhynchus mykiss</td>
</tr>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>Acute crustacea toxicity</td>
<td>EC50</td>
<td>1300000 - 1400000 mg/l</td>
<td>48</td>
<td>Daphnie LARVAE</td>
</tr>
<tr>
<td>78-83-1</td>
<td>2-methylpropan-1-ol; iso-butanol</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>1430 mg/l</td>
<td>96</td>
<td>Pimephales promelas</td>
</tr>
<tr>
<td>78-83-1</td>
<td>2-methylpropan-1-ol; iso-butanol</td>
<td>Acute algae toxicity ER50</td>
<td>1250 mg/l</td>
<td>Desmodesmus subspicatus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78-83-1</td>
<td>2-methylpropan-1-ol; iso-butanol</td>
<td>Acute crustacea toxicity EC50</td>
<td>1439 mg/l</td>
<td>Daphnia magna</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
No data available

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-83-1 2-methylpropan-1-ol; iso-butanol</td>
<td>0,79</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal number of waste from residues/unused products
160806 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; spent catalysts; spent liquids used as catalysts
Classified as hazardous waste.

Waste disposal number of used product
160806 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; spent catalysts; spent liquids used as catalysts
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: 1987
14.2. UN proper shipping name: ALCOHOLS, N.O.S. (ISOBUTANOL, 2-PROPANOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3

Classification code: F1
Special Provisions: 274 601 640D
Limited quantity: 1 L
Transport category: 2
Hazard No: 33
Tunnel restriction code: D/E

Other applicable information (land transport)

Inland waterways transport (ADN)

14.1. UN number: 1987
14.2. UN proper shipping name: ALCOHOLS, N.O.S. (ISOBUTANOL, 2-PROPANOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3

Classification code: F1
Special Provisions: 274 601 640D
Limited quantity: 1 L

Other applicable information (inland waterways transport)

Marine transport (IMDG)

14.1. UN number: 1987
14.2. UN proper shipping name: ALCOHOLS, N.O.S. (ISOBUTANOL, 2-PROPANOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: II
Hazard label: 3
Special Provisions:
Limited quantity: 1 L
EmS: F-E, S-DEmS:

Other applicable information (marine transport)
E2

Air transport (ICAO)

14.1. UN number: 1987
14.2. UN proper shipping name: ALCOHOLS, N.O.S. (ISOBUTANOL, 2-PROPANOL)
14.3. Transport hazard class(es): III
14.4. Packing group: 3
Hazard label: 3

Special Provisions: A3 A180
Limited quantity Passenger: 1 L
IATA-packing instructions - Passenger: 353
IATA-max. quantity - Passenger: 5 L
IATA-packing instructions - Cargo: 364
IATA-max. quantity - Cargo: 60 L

Other applicable information (air transport)
E2
: Y341

SECTION 15: Regulatory information

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

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

Additional information
VOC (CH) ~ 65% (756 g/L)

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

SECTION 16: Other information

Changes
aktualisiert Abschnitte 13,15

Abbreviations and acronyms
www.wikipedia.com

Full text of R phrases referred to under Sections 2 and 3
10 Flammable.
11 Highly flammable.
36 Irritating to eyes.
37/38 Irritating to respiratory system and skin.
41 Risk of serious damage to eyes.
67 Vapours may cause drowsiness and dizziness.

Full text of H statements referred to under Sections 2 and 3
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
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.