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

1.1. Product identifier
SiliXan Cat 110
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
Additiv, Katalysator

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
Telephone: 0049 (0)68195940 45
e-mail: lang@nano-x.de
Internet: www.nano-x.de

1.4. Emergency telephone number:
+49 (0)6131 19240 Giftinfo Mainz (24h)

SECTION 2: Hazards identification

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

2.2. Label elements
Danger symbols: Xn - Harmful

Xn - Harmful

R phrases
10 Flammable.
22 Harmful if swallowed.
36/37 Irritating to eyes and respiratory system.
67 Vapours may cause drowsiness and dizziness.
SiliXan Cat 110
Product code: 04071304
Print date: 09.07.2013
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S phrases
23 Do not breathe aerosol/atomised spray.
25 Avoid contact with eyes.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
42 During spraying wear suitable respiratory equipment.
43 In case of fire, use Dry extinguishing powder..
51 Use only in well-ventilated areas.
36/37 Wear suitable protective clothing and gloves.

Special labelling of certain mixtures
Warning — this preparation contains a substance not yet tested completely.
For use in industrial installations or professional treatment only.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization
organo-metallic complex

Hazardous components

<table>
<thead>
<tr>
<th>EC No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>201-158-5</td>
<td>butan-2-ol</td>
<td>40 - 45 %</td>
</tr>
<tr>
<td>78-92-2</td>
<td></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>203-905-0</td>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>15 - 20 %</td>
</tr>
<tr>
<td>111-76-2</td>
<td>Xn - Harmful, Xi - Irritant R20/21/22-36/38</td>
<td></td>
</tr>
<tr>
<td>603-014-00-0</td>
<td>Acute Tox. 4, Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2, Skin Irrit. 2; H332 H312 H302 H319 H315</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 monoxide.

5.3. Advice for firefighters
In case of fire: Wear self-contained breathing apparatus. Full protective suit.

Additional information
Use water spray/stream to protect personnel and to cool endangered containers. 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. Water (with cleaning agent).

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. Clean with detergents. Avoid solvent cleaners. 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.

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>111-76-2</td>
<td>2-Butoxyethanol</td>
<td>25</td>
<td>123</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>246</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>124-17-4</td>
<td>2-(2-Butoxyethoxy)ethyl acetate</td>
<td>10</td>
<td>85</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>308</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>78-92-2</td>
<td>Butan-2-ol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biological Monitoring Guidance Values (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>Parameter</th>
<th>Value</th>
<th>Test material</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-76-2</td>
<td>2-Butoxyethanol</td>
<td>botoxyacetic acid</td>
<td>240 mmol/mol</td>
<td>urine</td>
<td>Post shift</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>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>characteristic</td>
<td></td>
</tr>
<tr>
<td>pH-Value</td>
<td>6,5</td>
<td>DIN 19261</td>
</tr>
</tbody>
</table>

Changes in the physical state

- Melting point: not determined
- Boiling point: not determined
- Flash point: 22 °C DIN ISO 3679
- Lower explosion limits: not determined
- Upper explosion limits: not determined
- Ignition temperature: not determined
- Vapour pressure: not determined
- Density: 0.95 g/cm³ DIN 12791 ISO 649
- Viscosity / dynamic: 20 mPa·s ISO 2555
- Flow time: 26 s (3 mm) 3 DIN 53211

9.2. Other information

Solid content: ~ 10%

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available

10.2. Chemical stability
No data available

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.

10.5. Incompatible materials
Oxidizing agents. Alkalis (alkalis).

10.6. Hazardous decomposition products
No risks worthy of mention.

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 data 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>111-76-2</td>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>oral</td>
<td>LD50</td>
<td>470 mg/kg</td>
<td>Rat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>ATE</td>
<td>1100 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative vapour</td>
<td>ATE</td>
<td>11 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative aerosol</td>
<td>ATE</td>
<td>1.5 mg/l</td>
<td></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>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-92-2</td>
<td>butan-2-ol</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>3670 mg/l</td>
<td>Pimephales promelas</td>
<td>GESTIS</td>
</tr>
<tr>
<td>111-76-2</td>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>Acute fish toxicity</td>
<td>LC50</td>
<td>1490 mg/l</td>
<td>Lepomis macrochirus</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>111-76-2</td>
<td>2-butoxyethanol, butyl cellosolve, ethylene glycol monobutyl ether</td>
<td>0,81 (25°C)</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

Further information
Preparation not tested. The information about ecology refer to the main components.

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: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, 2-BUTOXYETHANOL)
14.3. Transport hazard class(es): III
14.4. Packing group: III
Hazard label: F1

Classification code: F1
Special Provisions: 274 601 640E
Limited quantity: 5 L
Transport category: 3
Hazard No: 30
Tunnel restriction code: D/E

Other applicable information (land transport)
E1

Inland waterways transport (ADN)
14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, 2-BUTOXYETHANOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3
Classification code: F1
Special Provisions: 274 601 640
Limited quantity: 5 L

Other applicable information (inland waterways transport)
E1

Marine transport (IMDG)
14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, 2-BUTOXYETHANOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3
Special Provisions: 223, 274, 955
Limited quantity: 5 L
EmS: F-E, S-E

Other applicable information (marine transport)
E1

Air transport (ICAO)
14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, 2-BUTOXYETHANOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
Hazard label: 3
Special Provisions: A3
Limited quantity Passenger: 10 L
IATA-packing instructions - Passenger: 355
IATA-max. quantity - Passenger: 60 L
IATA-packing instructions - Cargo: 366
SECTION 15: Regulatory information

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

National regulatory information
Water contaminating class (D): 2 - 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

Full text of R phrases referred to under Sections 2 and 3
10 Flammable.
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
22 Harmful if swallowed.
36/37 Irritating to eyes and respiratory system.
36/38 Irritating to eyes and skin.
67 Vapours may cause drowsiness and dizziness.

Full text of H statements referred to under Sections 2 and 3
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
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.)