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

1.1. Product identifier

SiliXan Cat 160-10/PMA

delivery product

Product group: delivery product

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
Telephone: 0049 (0)68195940 45
e-mail: lang@nano-x.de
Internet: www.nano-x.de
Responsible Department: NANO-X GmbH
sdb@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: F - Highly flammable, Xi - Irritant
R phrases:
Highly flammable.
Irritating to eyes and respiratory system.
Vapours may cause drowsiness and dizziness.

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.

2.2. Label elements
Hazard components for labelling

Butan-2-ol

Signal word: Danger

Pictograms: GHS02-GHS07

Hazard statements

H225 Highly flammable liquid and vapour.
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.
P235 Keep cool.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P337+P313 If eye irritation persists: Get medical advice/attention.

Special labelling of certain mixtures

For use in industrial installations or professional treatment only.

SECTION 3: Composition/information on ingredients

3.2. 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></td>
<td>Classification according to Directive 67/548/EEC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classification according to Regulation (EC) No. 1272/2008 [CLP]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REACH No</td>
<td></td>
</tr>
<tr>
<td>201-158-5</td>
<td>butan-2-ol</td>
<td>60 - &lt; 65 %</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>203-603-9</td>
<td>2-methoxy-1-methylethyl acetate</td>
<td>25 - &lt; 30 %</td>
</tr>
<tr>
<td>108-65-6</td>
<td>R10</td>
<td></td>
</tr>
<tr>
<td>607-195-00-7</td>
<td>Flam. Liq. 3; H226</td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1. Description of first aid measures
General information
Remove contaminated, saturated clothing immediately. Move victim to fresh air. Instruct person to keep calm and warm. If unconscious place in recovery position and seek medical advice.

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

After contact with skin
Remove contaminated, saturated clothing immediately. After contact with skin, wash immediately with plenty of water and soap.

After contact with eyes
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion
Consult physician. Induce vomiting when the affected person is not unconscious.

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
Symptoms: Headache, Dizziness, Nausea, Unconsciousness
Other hazards: Do not give fatty oils and milk. Observe risk of aspiration if vomiting occurs.
Gastric lavage after giving liquid paraffin with added animal charcoal.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Carbon dioxide (CO2), alcohol resistant foam, Dry extinguishing powder, Water spray jet

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

5.2. Special hazards arising from the substance or mixture
In case of fire may be liberated: Carbon monoxide

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

Additional information
Use water spray jet to protect personnel and to cool endangered containers. 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
Use personal protective equipment as required. Keep away from unprotected people. Keep upwind. Provide adequate ventilation. Remove all sources of ignition. Avoid contact with skin and eyes. Do not breathe gas/fumes/vapour/spray.

6.2. Environmental precautions
Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Ventilate affected area.

6.3. Methods and material for containment and cleaning up
Clean contaminated articles and floor according to the environmental legislation. Suitable material for taking up: Universal binder 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 local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Handle and open container with care. It is recommended to design all work processes always so that the following is excluded: Inhalation, Skin contact, Eye contact.

Advice on protection against fire and explosion

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration. 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. Provide earthing of containers, equipment, pumps and ventilation facilities.

Protect against: Heat, Frost, flame, Humidity

Advice on storage compatibility

The storage class according to TRGS 510 should be indicated.

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>108-65-6</td>
<td>1-Methoxypropyl acetate</td>
<td>50</td>
<td>274</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
<td>548</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<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 exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. In the immediate working surroundings there must be: Emergency shower installed, Provide eye shower and label its location conspicuously.

Protective and hygiene measures

It is recommended to design all work processes always so that the following is excluded: Inhalation, Skin contact, Eye contact. Wash hands before breaks and after work.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols. Filtering device (full mask or
mouthpiece) 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**
Use protective skin cream before handling the product. The required protective gloves have to be specified by the glove material and the penetration time of the glove material depending on strength and duration of dermal exposition. Draw up and observe skin protection programme. Suitable material: NBR (Nitrile rubber), FKM (fluoro rubber) Butyl caoutchouc (butyl rubber)

**Eye protection**
Wear eye/face protection.

**Skin protection**
lab coat

**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>colourless</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
<td></td>
</tr>
<tr>
<td>pH-Value</td>
<td>not determined</td>
<td>DIN 19261</td>
</tr>
<tr>
<td>Changes in the physical state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>17 °C</td>
<td>DIN ISO 3679</td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>1,0 g/cm³</td>
<td>DIN 12791 ISO 649</td>
</tr>
<tr>
<td>Water solubility</td>
<td>not miscible</td>
<td></td>
</tr>
<tr>
<td>Viscosity / dynamic</td>
<td>~ 15 mPa·s</td>
<td>ISO 2555</td>
</tr>
<tr>
<td>Flow time</td>
<td>~ 22 s (3 mm)</td>
<td>3 DIN 53211</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>~ 10%</td>
</tr>
</tbody>
</table>

### 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 a temperature not exceeding 30 °C (to be specified by the
manufacturer). Avoid contact with heat sources. Keep away from heat.

10.5. Incompatible materials

Oxidising agent, strong, alkali

10.6. Hazardous decomposition products

No risks worthy of mention.

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Exposure route</th>
<th>Method</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<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></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg</td>
<td>Kaninchen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>inhalative (4 h) vapour</td>
<td>LC50</td>
<td>48.5 mg/l</td>
<td>Ratte</td>
<td>RTECS</td>
</tr>
<tr>
<td>2-methoxy-1-methylethyl acetate</td>
<td>oral</td>
<td>LD50</td>
<td>8532 mg/kg</td>
<td>Rat</td>
<td>RTECS</td>
</tr>
<tr>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>7500 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

Empirical data on effects on humans

Inhalation causes narcotic effects/intoxication.

Further information

Protective measures vgl. 7, 8

SECTION 12: Ecological information

12.1. Toxicity

No data available
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>108-65-6</td>
<td>2-methoxy-1-methylethyl acetate</td>
<td>0.43</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

Further information

Mixture 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 hazardous 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 hazardous 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 hazardous 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, METHOXYPROPYLACETAT)
14.3. Transport hazard class(es): III
14.4. Packing group: 3

Hazard label:

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

Inland waterways transport (ADN)

14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, METHOXYPROPYLACETAT)
14.3. Transport hazard class(es): III
14.4. Packing group: 3

Hazard label:

Classification code: F1
Special Provisions: 274 601 640E
Limited quantity: 5 L

Marine transport (IMDG)

14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, METHOXYPROPYLACETAT)
14.3. Transport hazard class(es): III
14.4. Packing group: 3

Hazard label:

Special Provisions: 223, 274, 955
Limited quantity: 5 L
EmS: F-E, S-E

Air transport (ICAO)

14.1. UN number: 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S. (BUTANOL, METHOXYPROPYLACETAT)
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
IATA-max. quantity - Cargo: 220 L

SECTION 15: Regulatory information

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

National regulatory information
Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water containing class (D): 1 - slightly water contaminating

Employment restrictions:
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.
11 Highly flammable.
36/37 Irritating to eyes and respiratory system.
67 Vapours may cause drowsiness and dizziness.

Relevant H and EUH statements (number and full text)
H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
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.)