1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

INOBOUND 705

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified Uses ***

- Binders for welding consumables (flux, stick electrodes)

Uses advised against ***

NONE

1.3. Details of the supplier of the safety data sheet

Address

vanBaerle AG
Schützenmattstrasse 21
4142 Münchenstein

Telephone no. +41 61 415 92 11

Information provided by / telephone

Department product safety

E-mail address of person responsible for this SDS

silikat@vanbaerle.ch

1.4. Emergency telephone number

Swiss Toxicological Information Centre 145 (international 0041 44 251 51 51)

2. Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2 H315
Eye Irrit. 2 H319
Classification in accordance with EC directives
Classification Xi, R36/38

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms

Signal word
Warning

Hazard statements

H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Labelling in accordance with EC directives 1999/45/EC and 67/548/EEC

The product is classified and labelled in accordance with EC Directive 99/45/EC. Labelling on the basis of results obtained from toxicological examinations.

Hazard symbols

R phrases
36/38 Irritating to eyes and skin.

S phrases
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

3. Composition/information on ingredients ***

Chemical characterization
Mixed silicate with a molar ratio Me2O : SiO2 = 1: > 2.60 - < 3.20

Hazardous ingredients ***

Silicic acid, potassium salt (Molar ratio K2O : SiO2 = 1 : > 2.6 - < 3.2)
CAS No. 1312-76-1
EINECS no. 215-199-1
Registration no. 01-2119456888-17-0003
Concentration 25 - 50 %
Classification Xi, R36/38
Classification (Regulation (EC) No. 1272/2008)
Skin Irrit. 2 H315
Eye Irrit. 2 H319

Silicic acid, sodium salt (Molar ratio Na2O : SiO2 = 1 : > 2.6 - < 3.2)
CAS No. 1344-09-8
EINECS no. 215-687-4
Registration no. 01-2119448725-31-0021
Concentration 2.5 - 10 %
Classification Xi, R36/38

Classification (Regulation (EC) No. 1272/2008)
Skin Irrit. 2 H315
Eye Irrit. 2 H319

Lithium hydroxide
CAS No. 1310-65-2
EINECS no. 215-183-4
Concentration 1 - 5 %
Classification C, R35

Classification (Regulation (EC) No. 1272/2008)
Acute Tox. 4 H302
Skin Corr. 1B H314
Aquatic Chronic 3 H412

Further ingredients ***
Water
CAS No. 7732-18-5
EINECS no. 231-191-2
Concentration 50 - 75 %

4. First aid measures
4.1. Description of first aid measures

General information
No special measures necessary.

After inhalation
No special measures required.

After skin contact
After contact with skin, wash immediately with plenty of water. Do not allow the product to dry on the skin. Consult a doctor if skin irritation persists.

After eye contact
Separate eyelids, wash the eyes thoroughly with water (15 min.). In case of irritation consult an oculist.

After ingestion
Rinse out mouth and give plenty of water to drink. Do not induce vomiting. Summon a doctor immediately.

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

Hints for the physician / hazards
5. Firefighting measures

5.1. Extinguishing media
   Suitable extinguishing media
   Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.
   Non Suitable extinguishing media
   Compatible with all usual extinguishing media.

5.2. Special hazards arising from the substance or mixture
   None known

5.3. Advice for firefighters
   Special protective equipment for fire-fighting
   In case of combustion use a suitable breathing apparatus.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
   Use personal protective clothing. High risk of slipping due to leakage/spillage of product.

6.2. Environmental precautions
   Do not allow to enter drains or waterways.

6.3. Methods and material for containment and cleaning up
   Take up with absorbent material (eg sand, kieselguhr, universal binder). Rinse away rest with plenty of water.

7. Handling and storage ***

7.1. Precautions for safe handling
   Advice on safe handling
   Observe the usual precautions for handling chemicals. Handle and open container with care.

7.2. Conditions for safe storage, including any incompatibilities
   Recommended storage temperature
   Value: 5 - 45 °C

   Storage stability ***
   Storage period: 12 month

   Requirements for storage rooms and vessels
   Keep only in the original container.

   VCI storage category
   VCI storage category: 12 Non-combustible liquids

   Further information on storage conditions
   Protect from frost.

8. Exposure controls/personal protection

8.2. Exposure controls
   General protective and hygiene measures
   Take off immediately all contaminated clothing. Wash hands before breaks and after work. Do not eat,
drink or smoke during work time.

**Respiratory protection**
Breathing apparatus in the event of aerosol or mist formation. Short term: filter apparatus, Filter B

**Hand protection**
Gloves (alkali-resistant)
Appropriate Material: Natural Latex
KCL Lapren 706 / 0.6mm / 480 min.

**Eye protection**
Safety glasses with side protection shield

**Body protection**
Clothing as usual in the chemical industry.

### 9. Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>liquid, clear</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>colourless</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>odourless</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>12 to 13</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>appr. 100 °C</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Non flammable</td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td>Not ignitable</td>
</tr>
<tr>
<td><strong>Explosion limits</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>not determined</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>appr. 1.39 kg/l</td>
</tr>
<tr>
<td><strong>Solubility in water</strong></td>
<td>Completely miscible</td>
</tr>
<tr>
<td><strong>Octanol/water partition coefficient (log Pow)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Ignition temperature</strong></td>
<td>Non flammable</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>appr. 300 mPa.s</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
9.2. Other information
   Solids content
   Value: appr. 39 %

10. Stability and reactivity
10.4. Conditions to avoid
   Protect from frost.

10.5. Incompatible materials
   Acids

10.6. Hazardous decomposition products
   No hazardous decomposition products known.

11. Toxicological information
11.1. Information on toxicological effects
   Acute oral toxicity
   Remarks
   The toxicological data shown are those obtained from tests on products of similar composition.
   Reference substance: Silicic acid, sodium salt (Molar ratio Na2O : SiO2 = 1 : 3.2-3.4; 35-40%)
   Species: rat
   LD50 > 2000 mg/kg
   Source: IUCLID
   Reference substance: Silicic acid, potassium salt (Molar ratio K2O : SiO2 = 1 : 3.9-4.0; 28-30%)
   Species: rat
   LD50 > 2000 mg/kg
   Source: IUCLID
   Reference substance: Silicic acid, sodium salt (Molar ratio Na2O : SiO2 = 1 : 2.0; 40-50%)
   Species: rat
   LD50 > 2000 mg/kg
   Source: IUCLID
   Remarks
   The poisonous effect of the product is caused by its alkalinity and not by substance-specific systemic characteristics. The LD50 value is of no practical significance due to the caustic effect of the product.

   Skin corrosion/irritation
   evaluation: irritant

   Serious eye damage/irritation
   evaluation: irritant

   Sensitization
   evaluation: non-sensitizing

   Experience in practice
   Contact of the product with skin or eyes may cause irritation.

   Other information
   When handled appropriately, even after long years of experience with this product, no adverse health effects are known.

12. Ecological information
12.1. Toxicity
Fish toxicity

Remarks Ecotoxicological data are taken from a similar product of the same type.
Reference substance Silicic acid, sodium salt (Molar ratio Na2O : SiO2 = 1 : 3.36; 35%)
Species Brachidanio rerio
LC50  > 2000 mg/l
Duration of exposure  96 h
Source IUCLID
Reference substance Silicic acid, potassium salt (Molar ratio K2O : SiO2 = 1 : 3.9-4.0; 29%)
Species Leuciscus idus
LC0  > 500 mg/l
Duration of exposure  48 h
Source IUCLID
Remarks The ecotoxic effect of the product is mainly due to its alkalinity.

Daphnia toxicity

Remarks Ecotoxicological data are taken from a similar product of the same type.
Reference substance Silicic acid, sodium salt (Molar ratio Na2O : SiO2 = 1 : 3.2; 35%)
Species Daphnia magna
EC0  > 2000 mg/l
Duration of exposure  48 h
Source IUCLID
Reference substance Silicic acid, potassium salt (Molar ratio K2O : SiO2 = 1 : 3.9-4.0; 29%)
Species Daphnia magna
EC0  > 500 mg/l
Duration of exposure  24 h
Source IUCLID
Remarks The ecotoxic effect of the product is mainly due to its alkalinity.

Bacteria toxicity

Remarks Ecotoxicological data are taken from a similar product of the same type.
Reference substance Silicic acid, sodium salt (Molar ratio Na2O : SiO2 = 1 : 3.36; 35%)
Species Pseudomonas putida
EC0  > 1000 mg/l
Duration of exposure  48 h
Source IUCLID
Remarks The ecotoxic effect of the product is mainly due to its alkalinity.

12.2. Persistence and degradability

Biodegradability

Remarks Inorganic product, cannot be eliminated from the water by biological purification processes.

12.3. Bioaccumulative potential

Octanol/water partition coefficient (log Pow)

Remarks Not applicable

12.6. Other adverse effects

Behaviour in sewers [waste treatment plants]

The product is an alkaline solution. Neutralization is normally necessary before a waste water is discharged into sewage treatment plants. When low concentrations are discharged correctly into adapted biological sewage treatment plants, disturbance of the degradation activity of activated sludge is not likely.

General information / ecology

Do not allow to enter soil, waterways or waste water canal.
13. Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product
EWC waste code 06 02 05* other bases
Dilution and neutralization with acid. After solidification (e.g. as CaSiO3 precipitate), landfill in accordance with local authorities. Re-use without reprocessing as long as not solidified.

Disposal recommendations for packaging
Completely emptied packagings can be given for recycling. Cleaned and empty drums can be returned to the supplier.

14. Transport information

Land transport ADR/RID
Remarks Not classified as dangerous according to transport regulations.

Marine transport IMDG/GGVSee
Remarks Not classified as dangerous according to transport regulations.

Air transport ICAO/IATA
Remarks Not classified as dangerous according to transport regulations.

15. Regulatory information

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

Water Hazard Class (Germany)
Water Hazard Class (Germany)
WGK 1

16. Other information

Restricted to professional users

R-phrases listed in Chapter 3
35 Causes severe burns.
36/38 Irritating to eyes and skin.

Hazard statements listed in Chapter 3
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

CLP categories listed in Chapter 3
Acute Tox. 4 Acute toxicity, Category 4
Aquatic Chronic 3 Hazardous to the aquatic environment, chronic, Category 3
Eye Irrit. 2 Eye irritation, Category 2
Skin Corr. 1B Skin corrosion, Category 1B
Skin Irrit. 2 Skin irritation, Category 2

Supplemental information
Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a
guarantee for any specific product properties and shall not establish a legally valid relationship.

**E-SDS Chapters**

<table>
<thead>
<tr>
<th>Exposure Scenario Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace exposure to sodium silicate (EC 215-687-4), potassium silicate (EC 215-199-1) and disodium metasilicate (EC 229-912-9) powder</td>
</tr>
</tbody>
</table>

**Use Descriptor**

Sector of Use: SU 3 and SU 22

Process Categories (PROC): 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 11, 13, 14, 22, 23, 24

Environmental Release Categories: not required

**Processes, tasks, activities covered**

Manufacture of the substance as well as industrial and professional uses.

---

**Section 2**

**Operational conditions and risk management measures**

Whenever handling sodium/potassium silicate/disodium metasilicate as a substance on its own (Lumps, powder/granules or liquid) or in a preparation outside closed systems, depending on the use and concentration suitable personal protective equipment (gloves, goggles, dust masks or respirators) are the preferred and only measure of control.

---

**Section 2.1**

**Control of worker exposure**

**Product characteristics**

Physical form of product: solid, powder, vapour pressure 0.0103 kPa (1175 °C) [OC3]

Concentration of substance in product: Covers percentage substance in the product up to 100 % [G13], unless otherwise stated.

Amounts used: No limit

Frequency and duration of use: Covers frequency up to: daily use, weekly, monthly, yearly [G6], unless otherwise stated.

Human factors not influenced by risk management: Not applicable

Other Operational Conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented [G1]

The work occurs inside as well outside [OC8, OC9]

**Contributing Scenarios**

PROC 1, 2, 3 Handle substance within a closed system [E47]. No other specific measures identified [E120].

PROC 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 22, 23, 24 Wear suitable gloves (tested to EN374) and eye protection [PPE19].

PROC 7, 11 Provide enhanced general ventilation by mechanical means [E48]. Wear suitable gloves (tested to EN374) and eye protection [PPE19], or Wear a respirator conforming to EN140 with Type A/P2 filter or better [PPE 29]. Wear suitable gloves (tested to EN374) and eye protection [PPE19].

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**Section 2.2**

**Control of environmental exposure**

Not required, as soluble silicates, including sodium/potassium silicate/disodium metasilicate, do not meet the criteria for classification as dangerous to the environment according to 67/548/EEC (See Article 14.4 of REACH Regulation). Furthermore, as high production volume substances, soluble silicates have been reviewed to a great extent for their exposure potential to the environment and the possible risks arising from their release (Van Dokkum et al. 2002, OECD SIDS 2004, HERA 2005, and CEES 2008). It was concluded that soluble silicates are currently of low priority for further work because of their low hazard profile.

---

**Section 3**

**Exposure Estimation**

**3.1. Health**

The ECETOC TRA tool with modifications as outlined in the CAS has been used to estimate worker exposures.
Section 4  
Guidance to check compliance with the Exposure Scenario

4.1. Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].
3.1. Health

The ECETOC TRA tool with modifications as outlined in the CAS has been used to estimate worker exposures.

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].

Section 1 Exposure Scenario Title

Title
Use in Consumer products

Use Descriptor
Sector(s) of Use 21
Product Categories 1, 9a, 9b, 14, 15, 17, 23, 24, 26, 30, 33, 34, 35, 39
Environmental Release Categories not required

Processes, tasks, activities covered
Covers general exposures to consumers arising from the use of household products sold

Assessment Method
See Section 3.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of consumer exposure

Product characteristics

| Physical form of product | Powder or liquid |
| Vapour pressure (kPa) | < 0.5 kPa |
| Concentration of substance in product | Unless otherwise stated, covered concentrations up to 100% [ConsOC1]. |

Amounts used

| Frequency and duration of use/exposure | Unless otherwise stated, covers use frequency up to 4 times per day [ConsOC4]; covers exposure up to 8 hours per event [ConsOC14]. |

Other Operational Conditions affecting exposure

| Other Operational Conditions affecting exposure | Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m³ room [ConsOC8]; assumes use with typical ventilation [ConsOC8]. |

Product Category Specific Risk Management Measures and Operating Conditions (only required controls to demonstrate safe use listed)

| PCs - general case | OC | In consumer products the irritation hazard of soluble silicates is addressed, if necessary, by appropriate labelling and the advice to use (household) gloves on the consumer product. In general, dermal, inhalation and oral consumer exposure are minimised due to formulation (limited concentration of soluble silicates, particle size distribution, agglomeration and dust potential, tablets and gels), packaging and bad taste of commercially available products. |
| RMM No specific RMMs identified beyond those OCs stated. |

| PC 1, 9a, 9b, 14, 15, 17, 23, 24, 26, 30, 33, 34, 39 | OC | Covers use up to 365 days/year [ConsOC3]; covers use under typical household ventilation [ConsOC8]; covers default OCs of ECETOC TRA tool. |
| RMM No specific RMMs identified beyond those OCs stated. |

| PC 35 - laundry handwashing (example) | OC | Unless otherwise stated, covered concentrations up to 25% [ConsOC1]; covers use up to 4 days/week [ConsOC3]; covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 1980 cm² [ConsOC5]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20 m³ [ConsOC8]; for each use event, covers exposure up to 0.17 hr/event[ConsOC14]. |
| RMM No specific RMMs identified beyond those OCs stated. |

| PC 35 - pre-treatment of clothes (example) | OC | Unless otherwise stated, covered concentrations up to 60% [ConsOC1]; covers use up to 21 tasks/week [ConsOC3]; covers skin contact area up to 840 cm² [ConsOC5]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20 m³ [ConsOC8]; for each use event, covers exposure up to 0.17 hr/event[ConsOC14]. |
| RMM No specific RMMs identified beyond those OCs stated. |
Section 3 Exposure Estimation

3.1. Health

The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC Report no. 107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated.

Section 4 Guidance to check compliance with the Exposure Scenario

4.1. Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22]. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. [G23].