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

1.1. Product identifier

Trade name

INOBOND 665

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
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)

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

Skin Irrit. 2 H315
Eye Irrit. 2 H319
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.

Warning
lenses, if present and easy to do. Continue rinsing.

medical advice.

Rinse skin with water/shower.

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

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
This product contains alkali silicates.

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
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

Form
liquid, clear

Colour
colourless

Odour
odourless

pH
Value 12 to 13

Melting point
Remarks Not applicable

Boiling point
Value appr. 100 °C

Flash point
Remarks Non flammable.

Flammability
Not ignitable

Explosion limits
Remarks Not applicable

Vapour pressure
Remarks not determined

Density
Value appr. 1.44 kg/l
Temperature 20 °C

Solubility in water
Remarks Completely miscible

Octanol/water partition coefficient (log Pow)
Remarks Not applicable

Ignition temperature
Remarks Non flammable.

Viscosity
Value appr. 200 mPa.s
Temperature 20 °C

Oxidising properties
Remarks Not applicable

9.2. Other information

Solids content
Value appr. 43 %

10. Stability and reactivity

10.4. Conditions to avoid
Protect from frost.

10.5. Incompatible materials
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 | Brachidano 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
15. Regulatory information

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

**Water Hazard Class (Germany)**
- Water Hazard Class: WGK 1

**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.

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>
<tr>
<td><strong>Use Descriptor</strong></td>
</tr>
<tr>
<td>Sector of Use: SU 3 and SU 22</td>
</tr>
<tr>
<td>Process Categories (PROC): 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 11, 13, 14, 22, 23, 24</td>
</tr>
<tr>
<td>Environmental Release Categories: not required</td>
</tr>
<tr>
<td>Processes, tasks, activities covered</td>
</tr>
<tr>
<td>Manufacture of the substance as well as industrial and professional uses.</td>
</tr>
</tbody>
</table>
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  Risk Management Measures.  
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].

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].

Section 1  Exposure Scenario Title  
Title  Workplace exposure to sodium silicate (EC 215-687-4), potassium silicate (EC 215-199-1) and disodium metasilicate (EC 229-912-9) solutions  
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, 25  
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 (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

<table>
<thead>
<tr>
<th>Product characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical form of product</td>
<td>liquid, solution, vapour pressure 0.0103 kPa (1175 °C) [OC3].</td>
</tr>
<tr>
<td>Concentration of substance in product</td>
<td>Covers percentage substance in the product up to 100 % [G13], unless otherwise stated.</td>
</tr>
<tr>
<td>Amounts used</td>
<td>No limit</td>
</tr>
</tbody>
</table>
| Frequency and duration of use | Covers frequency up to: daily use, weekly, monthly, yearly [G6]
Except for PROCs 7 and 11: Avoid carrying out operation for more than 1 hour [OC11] |
| 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**

**Risk Management Measures.**

| PROC 1, 2, 3 | Handle substance within a closed system [E47]. No other specific measures identified [EI20]. |
| 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 | Covers percentage substance in the product up to 25% [G12]. 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]. Avoid carrying out operation for more than 1 hour [OC11]. Wear suitable gloves (tested to EN374) and eye protection [PPE19]. |

**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].
### 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

#### Physical form of product
- Powder or liquid

#### Vapour pressure (kPa)
- ≤ 0.5 kPa

#### Concentration of substance in product
- Unless otherwise stated, cover concentrations up to 100% [ConsOC1].

#### Amounts used
- Unless otherwise stated, covers use amounts up to 37500 g [ConsOC2]; covers skin contact area up to 6660 cm² [ConsOC5].

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

#### Other Operational Conditions affecting exposure
- Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m³ room [ConsOC11]; 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**
- 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)**
- Unless otherwise stated, covers concentrations up to 25% [ConsOC1]; covers use up to 4 days/week [ConsOC3]; covers use up to 1 time/on day of use [ConsOC14]; covers skin contact area up to 1980 cm² [ConsOC5]; covers use under typical household ventilation [ConsOC8]; covers use in room size of 20 m³ [ConsOC11]; 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)**
- Unless otherwise stated, covers 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 [ConsOC11]; 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&CST 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].