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

1.1. Product identifier

Trade name

INOBOND 605

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
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

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 %

Other information
Educts are listed in EINECS

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
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 (e.g. 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. 1.37 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. 300 mPa.s
Temperature 20 °C

Oxidising properties
Remarks Not applicable

9.2. Other information

Solids content
Value appr. 38 %

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

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
LC50: > 500 mg/l
### Daphnia toxicity

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Ecotoxicological data are taken from a similar product of the same type.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>IUCLID</td>
</tr>
<tr>
<td>Species</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>EC0</td>
<td>&gt; 2000 mg/l</td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>48 h</td>
</tr>
<tr>
<td>Source</td>
<td>IUCLID</td>
</tr>
<tr>
<td>Species</td>
<td>Silicic acid, potassium salt (Molar ratio K₂O : SiO₂ = 1 : 3.9-4.0; 29%)</td>
</tr>
<tr>
<td>EC0</td>
<td>&gt; 500 mg/l</td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>24 h</td>
</tr>
</tbody>
</table>

### Bacteria toxicity

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Ecotoxicological data are taken from a similar product of the same type.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>IUCLID</td>
</tr>
<tr>
<td>Species</td>
<td>Pseudomonas putida</td>
</tr>
<tr>
<td>EC0</td>
<td>&gt; 1000 mg/l</td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>48 h</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

#### Biodegradability

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Inorganic product, cannot be eliminated from the water by biological purification processes.</th>
</tr>
</thead>
</table>

### 12.3. Bioaccumulative potential

#### Octanol/water partition coefficient (log Pow)

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

### 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

<table>
<thead>
<tr>
<th>Disposal recommendations for the product</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWC waste code</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disposal recommendations for packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely emptied packagings can be given for recycling.</td>
</tr>
<tr>
<td>Cleaned and empty drums can be returned to the supplier.</td>
</tr>
</tbody>
</table>
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 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>Title</td>
</tr>
<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>Use Descriptor</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>
</tbody>
</table>
### 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 respirations) are the preferred and only measure of control.

### Section 2.1
#### Control of worker exposure

### Product characteristics

<table>
<thead>
<tr>
<th>Physical form of product</th>
<th>solid, powder, vapour pressure 0.0103 kPa (1175 °C) [OC3]</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>Frequency and duration of use</td>
<td>Covers frequency up to: daily use, weekly, monthly, yearly [G6], unless otherwise stated.</td>
</tr>
<tr>
<td>Human factors not influenced by risk management</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 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 [E20]. |
| 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 [PPE29]. 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

<table>
<thead>
<tr>
<th>Title</th>
<th>Workplace exposure to sodium silicate (EC 215-687-4), potassium silicate (EC 215-199-1) and disodium metasilicate (EC 229-912-9) solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Descriptor</td>
<td>Sector of Use: SU 3 and SU 22</td>
</tr>
</tbody>
</table>
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

Product characteristics
Physical form of product
liquid, solution, 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]
 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].
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, 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 use 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 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, covers 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 20m³ [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) OC 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&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].