SAFE

SPIKES SPECIAL ADHESIVE

SECTION 1. IDENTIFICATION

Product name : Spikes Special Adhesive
Product code : SSA

Manufacturer or supplier’s details
Company name of supplier : Bird-X
Address : 300 N. Oakley Blvd.
Chicago, IL 60612
Telephone : (312) 226-2473
Emergency telephone : AAPCC: 1(800)222-1222

Recommended use of the chemical and restrictions on use
Recommended use : Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Eye irritation : Category 2A
Skin sensitization : Category 1
Specific target organ systemic toxicity - repeated exposure (Oral) : Category 2 (Blood)

GHS Label element
Hazard pictograms :

Signal Word : Warning

Hazard Statements : H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H373 May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed.

Precautionary Statements : Prevention:
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of
SPIKES SPECIAL ADHESIVE

the workplace.
P280 Wear eye protection/ face protection.
P280 Wear protective gloves.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention if you feel unwell.
P333 + P352 IF skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Silicone
Sealant

Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon dioxide</td>
<td>7631-86-9</td>
<td>&gt;= 5 - &lt; 10</td>
</tr>
<tr>
<td>Methyltri(ethylmethylketoxime)ilane</td>
<td>22984-54-9</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td>Vinyltri (methyleneylektoxime) silane</td>
<td>2224-33-1</td>
<td>&gt;= 1 - &lt; 5</td>
</tr>
<tr>
<td>N-(3-(Trimethoxysilyl)propyl)methylenediamine</td>
<td>1760-24-3</td>
<td>&gt;= 0.1 - &lt; 1</td>
</tr>
<tr>
<td>Methyltri(ethylmethylketoxime)ilane isomers and oligomers</td>
<td>Not Assigned</td>
<td>&gt;= 0.1 - &lt; 1</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes.
SPIKES SPECIAL ADHESIVE

Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.

In case of eye contact:  
In case of contact, immediately flush eyes with plenty of water  
for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention.

If swallowed:  
If swallowed, DO NOT induce vomiting.  
Get medical attention if symptoms occur.  
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed:  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause damage to organs through prolonged or repeated exposure if swallowed.

Protection of first-aiders:  
First Aid responders should pay attention to self-protection,  
and use the recommended personal protective equipment  
when the potential for exposure exists.

Notes to physician:  
Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:  
Water spray  
Alcohol-resistant foam  
Dry chemical  
Carbon dioxide (CO2)

Unsuitable extinguishing media:  
None known.

Specific hazards during firefighting:  
Exposure to combustion products may be a hazard to health.

Hazardous combustion products:  
Carbon oxides  
Silicon oxides  
Formaldehyde  
Nitrogen oxides (NOx)

Specific extinguishing methods:  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

Special protective equipment for fire-fighters:  
In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
### SECTION 6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protective equipment and emergency procedures | Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations. |
| Environmental precautions | Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. |
| Methods and materials for containment and cleaning up | Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. |

### SECTION 7. HANDLING AND STORAGE

| Technical measures | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
| Local/Total ventilation | Use only with adequate ventilation. |
| Advice on safe handling | Do not get on skin or clothing. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Keep away from water. Protect from moisture. Take care to prevent spills, waste and minimize release to the environment. |
| Conditions for safe storage | Keep in properly labeled containers. Store in accordance with the particular national regulations. |
| Materials to avoid | Do not store with the following product types: Strong oxidizing agents |
### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon dioxide</td>
<td>7631-86-9</td>
<td>TWA (Dust)</td>
<td>20 Million particles per cubic foot (Silica)</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dust)</td>
<td>80 mg/m(^3) / %SiO(_2) (Silica)</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>6 mg/m(^3) (Silica)</td>
<td>NIOSH REL</td>
</tr>
</tbody>
</table>

#### Hazardous components without workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyltri(ethylmethylketoxime) silane</td>
<td>22984-54-9</td>
</tr>
<tr>
<td>Vinyltri (methylene)ketoxime) silane</td>
<td>2224-33-1</td>
</tr>
<tr>
<td>N-(3-(Trimethoxysilyl)propyl)ethylene diamine</td>
<td>1760-24-3</td>
</tr>
<tr>
<td>Methyltri(ethylmethylketoxime) silane isomers and oligomers</td>
<td>Not Assigned</td>
</tr>
</tbody>
</table>

#### Occupational exposure limits of decomposition products

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl methyl ketoxime</td>
<td>96-29-7</td>
<td>TWA</td>
<td>10 ppm</td>
<td>DCC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>Further information: Skin sensitization</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm</td>
<td>US WEEL</td>
</tr>
</tbody>
</table>

#### Engineering measures

Processing may form hazardous compounds (see section 10). Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

#### Personal protective equipment

**Respiratory protection**

General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled exposure.
release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Material : Impervious gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Eye protection : Wear the following personal protective equipment:
Safety goggles

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

Hygiene measures : Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : paste
Color : colorless
Odor : slight
Odor Threshold : No data available
pH : Not applicable
Melting point/freezing point : No data available
Initial boiling point and boiling range : Not applicable
Flash point : Not applicable
Evaporation rate : Not applicable
Flammability (solid, gas) : Not classified as a flammability hazard
Upper explosion limit : No data available
Lower explosion limit : No data available
Vapor pressure : Not applicable
Relative vapor density : No data available
Relative density : 1.04

Solubility(ies)
  Water solubility : No data available
  Partition coefficient: n-octanol/water : No data available
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
  Viscosity, dynamic : Not applicable
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Molecular weight : No data available

SECTION 10. STABILITY AND REACTIVITY
Reactivity : Not classified as a reactivity hazard.
Chemical stability
  Possibility of hazardous reactions : Stable under normal conditions.
  Use at elevated temperatures may form highly hazardous compounds.
  Can react with strong oxidizing agents.
  Hazardous decomposition products will be formed upon contact with water or humid air.
  Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid : Exposure to moisture.
Incompatible materials : Oxidizing agents
  Water
Hazardous decomposition products
  Contact with water or humid air: Ethyl methyl ketoxime
  Thermal decomposition: Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Skin contact
Ingestion
Eye contact

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Ingredients:
Silicon dioxide:
Acute oral toxicity: LD50 (Rat): > 3,300 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Information taken from reference works and the literature.

Acute inhalation toxicity: LC50 (Rat): > 2.08 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Information taken from reference works and the literature.

Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:
Acute oral toxicity: LD50 (Rat): > 2,520 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Based on test data

Vinyltri (methylethylketoxime) silane:
Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral tox-
Acute dermal toxicity:
  LD50 (Rat): > 2,000 mg/kg
  Assessment: The substance or mixture has no acute dermal toxicity
  Remarks: Based on test data

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:
  Acute oral toxicity:
    LD50 (Rat): 2,295 mg/kg
    Remarks: Based on test data
  Acute inhalation toxicity:
    LC50 (Rat): > 1.49 mg/l
    Exposure time: 4 h
    Test atmosphere: dust/mist
    Remarks: Based on test data
  Acute dermal toxicity:
    LD50 (Rabbit): > 2,000 mg/kg
    Assessment: The substance or mixture has no acute dermal toxicity
    Remarks: Based on test data

Skin corrosion/irritation
Not classified based on available information.

Ingredients:
Silicon dioxide:
  Result: No skin irritation
  Remarks: Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:
  Species: Rabbit
  Result: No skin irritation
  Remarks: Based on data from similar materials

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:
  Species: Rabbit
  Result: Mild skin irritation
  Remarks: Based on test data

Serious eye damage/eye irritation
Causes serious eye irritation.

Ingredients:
Silicon dioxide:
  Result: No eye irritation
  Remarks: Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:
  Species: Rabbit
  Result: Irritation to eyes, reversing within 7 days
  Remarks: Based on test data
Vinyltri (methylethylketoxime) silane:
Species: Rabbit
Result: Irreversible effects on the eye
Remarks: Based on test data

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:
Species: Rabbit
Result: Irreversible effects on the eye
Remarks: Based on test data

Methyltri(ethylmethylketoxime)silane isomers and oligomers:
Species: Rabbit
Result: Irritation to eyes, reversing within 7 days
Remarks: Based on data from similar materials

Respiratory or skin sensitization
Skin sensitization: May cause an allergic skin reaction.
Respiratory sensitization: Not classified based on available information.

Ingredients:
Silicon dioxide:
Assessment: Does not cause skin sensitization.

Test Type: Skin: test type not specified
Species: Guinea pig
Remarks: No known sensitising effect.
Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane:
Assessment: Probability or evidence of skin sensitization in humans

Test Type: Maximization Test (GPMT)
Species: Guinea pig
Remarks: Based on test data

Vinyltri (methylethylketoxime) silane:
Assessment: Probability or evidence of skin sensitization in humans

Test Type: Maximization Test (GPMT)
Species: Guinea pig
Remarks: Causes sensitization.
Based on data from similar materials

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:
Assessment: Probability or evidence of skin sensitization in humans

Test Type: Maximization Test (GPMT)
Species: Guinea pig
Remarks: Causes sensitization.
Information taken from reference works and the literature.

Methyltri(ethylmethylketoxime)silane isomers and oligomers:
Assessment: Probability or evidence of skin sensitization in humans
Test Type: Maximization Test (GPMT)
Species: Guinea pig
Remarks: Causes sensitization.
Based on data from similar materials

**Germ cell mutagenicity**
Not classified based on available information.

**Ingredients:**

**Silicon dioxide:**
Genotoxicity in vitro : Result: negative
Remarks: Information taken from reference works and the literature.

Genotoxicity in vivo : Application Route: Ingestion
Result: negative
Remarks: Information taken from reference works and the literature.

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

**Methyltri(ethylmethylketoxime)silane:**
Genotoxicity in vitro : Test Type: Mutagenicity (in vitro mammalian cytogenetic test)
Result: negative
Remarks: Based on test data

**Vinyltri (methylethylketoxime) silane:**
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on test data

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative
Remarks: Based on test data

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

**Carcinogenicity**
Not classified based on available information.

**IARC**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

Ingredients:
Methyltri(ethylmethylketoxime)silane:
Effects on fertility  :  Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat, male and female  
Application Route: Ingestion  
Symptoms: No effects on fertility.  
Remarks: Based on test data

Effects on fetal development  :  Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat, male and female  
Application Route: Ingestion  
Symptoms: No effects on fetal development.  
Remarks: Based on test data

Reproductive toxicity - Assessment  :  No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:
Effects on fertility  :  Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Application Route: Ingestion  
Symptoms: No effects on fertility.  
Remarks: Based on test data

Effects on fetal development  :  Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Application Route: Ingestion  
Symptoms: No effects on fetal development.  
Remarks: Based on test data

Reproductive toxicity - Assessment  :  No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed.

Ingredients:
Methyltri(ethylmethylketoxime)silane:
Routes of exposure: Ingestion  
Target Organs: Blood  
Assessment: Shown to produce significant health effects in animals at concentrations of >10 to
100 mg/kg bw.

**Vinyltri (methylethylketoxime) silane:**
Routes of exposure: Ingestion
Target Organs: Blood
Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

**N-(3-(Trimethoxysilyl)propyl)ethylenediamine:**
Routes of exposure: Ingestion
Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

**Methyltri(ethylmethylketoxime)silane isomers and oligomers:**
Routes of exposure: Ingestion
Target Organs: Blood
Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

**Repeated dose toxicity**

**Ingredients:**

**Methyltri(ethylmethylketoxime)silane:**
Species: Rat
Application Route: Ingestion
Target Organs: Blood
Remarks: Based on test data

**Vinyltri (methylethylketoxime) silane:**
Species: Rat
Application Route: Ingestion
Target Organs: Blood
Remarks: Based on data from similar materials

**N-(3-(Trimethoxysilyl)propyl)ethylenediamine:**
Application Route: Ingestion
Remarks: Based on test data

**Methyltri(ethylmethylketoxime)silane isomers and oligomers:**
Species: Rat
Application Route: Ingestion
Target Organs: Blood
Remarks: Based on data from similar materials

**Aspiration toxicity**
Not classified based on available information.

**Further information**

**Product:**
Remarks: During use of the material, small amounts of methylethylketoxime (MEKO) will be released. Rodents exposed to chronic MEKO inhalation throughout their lifetimes showed significant increases in liver tumor rates.
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

**Ingredients:**

Methyltri(ethylmethylketoxime)silane:

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>LC50 (Oncorhynchus mykiss (rainbow trout)): &gt; 120 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>96 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 203</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates:

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>EC50 (Daphnia magna (Water flea)): &gt; 120 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>48 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 202</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

Toxicity to algae:

<table>
<thead>
<tr>
<th>Toxicity to algae</th>
<th>ErC50 (Selenastrum capricornutum (green algae)): 94 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>72 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 201</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

Ecotoxicology Assessment

Acute aquatic toxicity: This product has no known ecotoxicological effects.

N-(3-(Trimethoxysilyl)propyl)ethylenediamine:

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>LC50 (Danio rerio (zebra fish)): 597 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>96 h</td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates:

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>EC50 (Daphnia sp.): 81 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>48 h</td>
</tr>
</tbody>
</table>

Toxicity to algae:

<table>
<thead>
<tr>
<th>Toxicity to algae</th>
<th>ErC50 (Selenastrum capricornutum (green algae)): 8.8 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>72 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 201</td>
</tr>
<tr>
<td>NOEC</td>
<td>(Selenastrum capricornutum (green algae)): 3.1 mg/l</td>
</tr>
<tr>
<td>Exposure time</td>
<td>72 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 201</td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
<th>NOEC (Daphnia sp.): &gt; 1 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>21 d</td>
</tr>
</tbody>
</table>

Toxicity to bacteria:

<table>
<thead>
<tr>
<th>Toxicity to bacteria</th>
<th>EC50 (Pseudomonas putida): 67 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>16 h</td>
</tr>
<tr>
<td>Test Type</td>
<td>Growth inhibition</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 38 412 Part 8</td>
</tr>
</tbody>
</table>
Persistence and degradability

**Ingredients:**

**Methyltri(ethylmethylketoxime)silane:**
- Biodegradability: Result: Not readily biodegradable.
  - Biodegradation: 14.5%
  - Exposure time: 21 d
  - Method: OECD Test Guideline 302B
  - Remarks: Based on data from similar materials

**Vinyltri (methylethylketoxime) silane:**
- Biodegradability: Result: Not readily biodegradable.
- Stability in water: Degradation half life: 1 s

**N-(3-(Trimethoxysilyl)propyl)ethylenediamine:**
- Biodegradability: Result: Not readily biodegradable.
  - Biodegradation: 39%
  - Method: OECD Test Guideline 301A
- Stability in water: Degradation half life: 0.025 h (24.7 °C) pH: 7
  - Method: OECD Test Guideline 111

Bioaccumulative potential

**Ingredients:**

**Methyltri(ethylmethylketoxime)silane:**
- Partition coefficient: n-octanol/water: log Pow: 11.2

**N-(3-(Trimethoxysilyl)propyl)ethylenediamine:**
- Partition coefficient: n-octanol/water: log Pow: -0.3

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

**Resource Conservation and Recovery Act (RCRA):**
- This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.

**Waste from residues:**
- Dispose of in accordance with local regulations.

**Contaminated packaging:**
- Dispose of as unused product. Empty containers should be taken to an approved waste han-
SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Hexane</td>
<td>110-54-3</td>
<td>5000</td>
<td>*</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>5000</td>
<td>*</td>
</tr>
<tr>
<td>Ethylenediamine</td>
<td>107-15-3</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylenediamine</td>
<td>107-15-3</td>
<td>5000</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard
                      Chronic Health Hazard

SARA 302            : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313            : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SPIKES SPECIAL ADHESIVE

US State Regulations

Pennsylvania Right To Know
Dimethyl siloxane, hydroxy-terminated 70131-67-8 70 - 90 %
Silicon dioxide 7631-86-9 5 - 10 %
Methyltri(ethylmethylketoxime)silane 22984-54-9 1 - 5 %

New Jersey Right To Know
Dimethyl siloxane, hydroxy-terminated 70131-67-8 70 - 90 %
Silicon dioxide 7631-86-9 5 - 10 %
Methyltri(ethylmethylketoxime)silane 22984-54-9 1 - 5 %
Vinyltri (methylethylketoxime) silane 2224-33-1 1 - 5 %

California Prop 65
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
Methanol 67-56-1

The ingredients of this product are reported in the following inventories:

NZIoC : All ingredients listed or exempt.
TSCA : All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.
AICS : All ingredients listed or exempt.
IECSC : All ingredients listed or exempt.
ENCS/ISHL : All components are listed on ENCS/ISHL or exempted from inventory listing.
KECI : All ingredients listed, exempt or notified.
PICCS : All ingredients listed or exempt.
DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECl (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)
SECTION 16. OTHER INFORMATION

Further information

NFPA:  
- Flammability:  
  - Health: 2  
  - Reactivity: 0  
  - Special hazard:

HMIS III:

- HEALTH: 2*  
- FLAMMABILITY: 1  
- PHYSICAL HAZARD: 0

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

Full text of other abbreviations

- DCC OEL: Dow Corning Guide  
- NIOSH REL: USA. NIOSH Recommended Exposure Limits  
- OSHA Z-3: USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts  
- US WEEL: USA. Workplace Environmental Exposure Levels (WEEL)  
- DCC OEL / TWA: Time weighted average  
- NIOSH REL / TWA: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek  
- OSHA Z-3 / TWA: 8-hour time weighted average  
- US WEEL / TWA: 8-hr TWA  

Revision Date: 04/04/2015

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.
SPIKES SPECIAL ADHESIVE

US / Z8