

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : KonductoMet  
Product code : 20-3375-016, 20-3375-400

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory chemicals  
Recommended use : Laboratory chemicals  
Restrictions on use : None known

#### 1.3. Supplier

Buehler  
41 Waukegan Rd  
Lake Bluff, IL 60044  
T 1-847-295-6500  
[custserv@buehler.com](mailto:custserv@buehler.com)

#### 1.4. Emergency telephone number

Emergency number : Global Access Code: 334545; Americas" +1 760 476 3962; Middle East/Africa: +1 760 476 3959;  
Asia Pacific +1 760 476 3960; Europe +1 760 476 3961

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

|   |      |   |
|---|------|---|
| Skin corrosion/irritation Category 2                          | H315 | Causes skin irritation  |
| Serious eye damage/eye irritation Category 1                  | H318 | Causes serious eye damage   |
| Skin sensitization, Category 1                                | H317 | May cause an allergic skin reaction                               |
| Germ cell mutagenicity Category 2                             | H341 | Suspected of causing genetic defects                              |
| Carcinogenicity Category 1A                                   | H350 | May cause cancer  |
| Specific target organ toxicity (repeated exposure) Category 2 | H373 | May cause damage to organs through prolonged or repeated exposure |

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger  
Hazard statements (GHS US) : H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H341 - Suspected of causing genetic defects  
H350 - May cause cancer  
H373 - May cause damage to organs through prolonged or repeated exposure

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Precautionary statements (GHS US) : P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P272 - Contaminated work clothing must not be allowed out of the workplace.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P352 - If on skin: Wash with plenty of 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.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P310 - Immediately call a poison center or doctor.  
P314 - Get medical advice/attention if you feel unwell.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P363 - Wash contaminated clothing before reuse.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name   | Product identifier  | %       | GHS US classification  |
|--|---------------------|---------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane | CAS-No.: 100-97-0   | 5 – 10  | Flam. Sol. 2, H228<br>Skin Sens. 1, H317   |
| Quartz                                       | CAS-No.: 14808-60-7 | 0.1 – 3 | Carc. 1A, H350   |
| Phenol                                       | CAS-No.: 108-95-2   | 0.1 – 3 | Acute Tox. 3 (Oral), H301<br>Acute Tox. 3 (Dermal), H311<br>Acute Tox. 3 (Inhalation:dust,mist),<br>H331<br>Skin Corr. 1B, H314<br>Eye Irrit. 2A, H319<br>Muta. 2, H341<br>STOT RE 2, H373 |

Full text of hazard classes and H-statements : see section 16

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### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

|                                       |  |
|---------------------------------------|--|
| First-aid measures general            | : IF exposed or concerned: Get medical advice/attention.   |
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing.   |
| First-aid measures after skin contact | : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.                   |
| First-aid measures after eye contact  | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately. |
| First-aid measures after ingestion    | : Call a poison center/doctor/physician if you feel unwell.  |

#### 4.2. Most important symptoms and effects (acute and delayed)

|                                     |  |
|-------------------------------------|--|
| Symptoms/effects after skin contact | : Irritation. May cause an allergic skin reaction. |
| Symptoms/effects after eye contact  | : Serious damage to eyes.                          |

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

|                                |                                  |
|--------------------------------|----------------------------------|
| Suitable extinguishing media   | : Water spray. Dry powder. Foam. |
| Unsuitable extinguishing media | : Not determined.                |

#### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Special protective equipment and precautions for fire-fighters

|                                |  |
|--------------------------------|--|
| Firefighting instructions      | : Fight fire with normal precautions from a reasonable distance.   |
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapors/spray.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

|                         |   |
|-------------------------|---|
| Methods for cleaning up | : Mechanically recover the product. Notify authorities if product enters sewers or public waters. |
| Other information       | : Dispose of materials or solid residues at an authorized site.                                   |

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### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

|                               |   |
|-------------------------------|---|
| Precautions for safe handling | : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Wear personal protective equipment. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. |
| Hygiene measures              | : Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.   |

### 7.2. Conditions for safe storage, including any incompatibilities

|                    |   |
|--------------------|---|
| Storage conditions | : Store locked up. Store in a well-ventilated place. Keep cool. |
|--------------------|---|

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

|  |  |
|--|--|
| <b>KonductoMet</b>   |  |
| No additional information available                            |  |
| <b>1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (100-97-0)</b> |  |
| <b>USA - ACGIH - Occupational Exposure Limits</b>              |  |
| ACGIH OEL TWA  | 1 mg/m <sup>3</sup> (inhalable fraction and vapor)   |
| ACGIH chemical category  | Not Classifiable as a Human Carcinogen, dermal sensitizer  |
| <b>Quartz (14808-60-7)</b>                                     |  |
| <b>USA - ACGIH - Occupational Exposure Limits</b>              |  |
| ACGIH OEL TWA  | 0.025 mg/m <sup>3</sup> (respirable particulate matter)  |
| ACGIH chemical category  | Suspected Human Carcinogen   |
| <b>USA - OSHA - Occupational Exposure Limits</b>               |  |
| OSHA PEL (TWA) [1]   | 50 µg/m <sup>3</sup> (Respirable crystalline silica)   |
| <b>Phenol (108-95-2)</b>                                       |  |
| <b>USA - ACGIH - Occupational Exposure Limits</b>              |  |
| ACGIH OEL TWA [ppm]  | 5 ppm  |
| ACGIH chemical category  | Skin - potential significant contribution to overall exposure by the cutaneous route, Not Classifiable as a Human Carcinogen |
| <b>USA - ACGIH - Biological Exposure Indices</b>               |  |
| BEI (BLV)  | 250 mg/g Kreatinin Parameter: Phenol with hydrolysis - Medium: urine - Sampling time: end of shift (background, nonspecific) |

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### Phenol (108-95-2)

#### USA - OSHA - Occupational Exposure Limits

|                             |                                   |
|-----------------------------|-----------------------------------|
| OSHA PEL (TWA) [1]          | 19 mg/m <sup>3</sup>              |
| OSHA PEL (TWA) [2]          | 5 ppm                             |
| Limit value category (OSHA) | prevent or reduce skin absorption |

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

Wear respiratory protection.

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

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

|   |                     |
|---|---------------------|
| Physical state                                  | : Solid             |
| Appearance                                      | : granules.         |
| Color   | : Black             |
| Odor  | : Slight            |
| Odor threshold                                  | : No data available |
| pH  | : No data available |
| Melting point                                   | : No data available |
| Freezing point                                  | : Not applicable    |
| Boiling point                                   | : No data available |
| Flash point                                     | : Not applicable    |
| Relative evaporation rate (butyl acetate=1)     | : No data available |
| Flammability (solid, gas)                       | : Non flammable.    |
| Vapor pressure                                  | : No data available |
| Relative vapor density at 20 °C                 | : No data available |
| Relative density                                | : 1.7 – 1.9         |
| Solubility                                      | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature                       | : Not applicable    |

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|                           |                     |
|---------------------------|---------------------|
| Decomposition temperature | : No data available |
| Viscosity, kinematic      | : Not applicable    |
| Viscosity, dynamic        | : No data available |
| Explosion limits          | : Not applicable    |
| Explosive properties      | : No data available |
| Oxidizing properties      | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                             |                   |
|-----------------------------|-------------------|
| Acute toxicity (oral)       | : Not classified. |
| Acute toxicity (dermal)     | : Not classified. |
| Acute toxicity (inhalation) | : Not classified. |

#### 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (100-97-0)

|                 |               |
|-----------------|---------------|
| LD50 oral rat   | > 20000 mg/kg |
| LD50 dermal rat | > 2000 mg/kg  |

#### Phenol (108-95-2)

|                     |                       |
|---------------------|-----------------------|
| LD50 oral rat       | 340 mg/kg             |
| LD50 dermal rabbit  | 630 mg/kg             |
| ATE US (oral)       | 100 mg/kg body weight |
| ATE US (dermal)     | 300 mg/kg body weight |
| ATE US (dust, mist) | 0.5 mg/l/4h           |

|                               |                              |
|-------------------------------|------------------------------|
| Skin corrosion/irritation     | : Causes skin irritation.    |
| Serious eye damage/irritation | : Causes serious eye damage. |

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|                                   |   |
|-----------------------------------|---|
| Respiratory or skin sensitization | : May cause an allergic skin reaction.  |
| Germ cell mutagenicity            | : Suspected of causing genetic defects. |
| Carcinogenicity                   | : May cause cancer.                     |

| Quartz (14808-60-7)                          |                            |
|--|----------------------------|
| IARC group                                   | 1 - Carcinogenic to humans |
| National Toxicity Program (NTP) Status       | Known Human Carcinogens    |
| In OSHA Hazard Communication Carcinogen list | Yes                        |

| Phenol (108-95-2)      |  |
|------------------------|--|
| IARC group             | 3 - Not classifiable   |
| Reproductive toxicity  | : Not classified.  |
| STOT-single exposure   | : Not classified.  |
| STOT-repeated exposure | : May cause damage to organs through prolonged or repeated exposure. |

| Phenol (108-95-2)                   |  |
|-------------------------------------|--|
| STOT-repeated exposure              | May cause damage to organs through prolonged or repeated exposure. |
| Aspiration hazard                   | : Not classified.  |
| Viscosity, kinematic                | : Not applicable   |
| Symptoms/effects after skin contact | : Irritation. May cause an allergic skin reaction.                 |
| Symptoms/effects after eye contact  | : Serious damage to eyes.  |

## SECTION 12: Ecological information

### 12.1. Toxicity

|                   |  |
|-------------------|--|
| Ecology - general | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. |
|-------------------|--|

| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (100-97-0) |  |
|---|--|
| LC50 - Fish [1]   | 44600 – 55600 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
| EC50 - Crustacea [1]                                    | 29868 – 43390 mg/l (Exposure time: 48 h - Species: Daphnia magna)                      |

| Phenol (108-95-2)    |  |
|----------------------|--|
| LC50 - Fish [1]      | 11.9 – 50.5 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
| EC50 - Crustacea [1] | 4.24 – 10.7 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])             |
| LC50 - Fish [2]      | 20.5 – 25.6 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])       |
| EC50 - Crustacea [2] | 10.2 – 15.5 mg/l (Exposure time: 48 h - Species: Daphnia magna)                      |

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (100-97-0) |   |
|---|---|
| Partition coefficient n-octanol/water (Log Pow)         | -2.18 (at 20 °C (at pH $\geq 7$ - $\leq 9$ )) |

| Phenol (108-95-2)                               |                                  |
|---|----------------------------------|
| BCF - Fish [1]                                  | (no significant bioaccumulation) |
| Partition coefficient n-octanol/water (Log Pow) | 1.5                              |

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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

### 14.1. UN number

Not regulated for transport

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable  
Proper Shipping Name (TDG) : Not applicable  
Proper Shipping Name (IMDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable

### 14.3. Transport hazard class(es)

**DOT**  
Transport hazard class(es) (DOT) : Not applicable

**IMDG**  
Transport hazard class(es) (IMDG) : Not applicable

**IATA**  
Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (DOT) : Not applicable  
Packing group (IMDG) : Not applicable  
Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

**DOT**  
No data available

**IMDG**  
No data available

**IATA**  
No data available



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### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### KonductoMet

|                                     |  |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Health hazard - Carcinogenicity<br>Health hazard - Respiratory or skin sensitization<br>Health hazard - Germ cell mutagenicity<br>Health hazard - Serious eye damage or eye irritation<br>Health hazard - Skin corrosion or Irritation<br>Health hazard - Specific target organ toxicity (single or repeated exposure) |
|-------------------------------------|--|

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

|        |                  |          |
|--------|------------------|----------|
| Phenol | CAS-No. 108-95-2 | 0.1 – 3% |
|--------|------------------|----------|

#### Phenol (108-95-2)

Listed on EPA Hazardous Air Pollutant (HAPS)

|  |                |
|--|----------------|
| CERCLA RQ  | 1000 lb        |
| Section 302 EPCRA Reportable Quantity (RQ)         | 1000 lb        |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 500 – 10000 lb |

### 15.2. International regulations

#### 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (100-97-0)

Listed on the NCI (Vietnam - National Chemical Inventory)

#### Quartz (14808-60-7)

Listed on IARC (International Agency for Research on Cancer)  
Listed as carcinogen on NTP (National Toxicology Program)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

| Component  | State or local regulations                                 |
|--|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane(100-97-0) | U.S. - New Jersey - Right to Know Hazardous Substance List |

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| Component          | State or local regulations   |
|--------------------|--|
| Quartz(14808-60-7) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List  |
| Phenol(108-95-2)   | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List |

### SECTION 16: Other information

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Revision date : 08/25/2022

| Full text of H-phrases |   |
|------------------------|---|
| H228                   | Flammable solid   |
| H301                   | Toxic if swallowed  |
| H311                   | Toxic in contact with skin  |
| H314                   | Causes severe skin burns and eye damage                           |
| H315                   | Causes skin irritation  |
| H317                   | May cause an allergic skin reaction                               |
| H318                   | Causes serious eye damage   |
| H319                   | Causes serious eye irritation                                     |
| H331                   | Toxic if inhaled  |
| H341                   | Suspected of causing genetic defects                              |
| H350                   | May cause cancer  |
| H373                   | May cause damage to organs through prolonged or repeated exposure |

Safety Data Sheet (SDS), USA - HSI

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