SECTION 1. IDENTIFICATION

Product name : STAPA 4 X Aluminium Paste

Product code : 053210G60

Manufacturer or supplier's details

Company name of supplier : ECKART GmbH

Address : Guentersthal 4
          Hartenstein  91235

Telephone : +499152770

Telefax : +499152777008

Emergency telephone : CHEMTREC: 800-424-9300
                      CHEMTREC: 1-703-527-3387 (International)
                      GBK Gefahrgut Buero GmbH, Ingelheim, Germany:
                      From outside US: (001) 352-323-3500
                      (First call in English, response in your language is possible)
                      US & Canada (toll free):1-800-5355-053

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable solids : Category 1

Skin irritation : Category 2

Eye irritation : Category 2A

Specific target organ systemic toxicity - repeated exposure : Category 2

GHS label elements
Hazard pictograms:

Signal Word: Danger

Hazard Statements:
- H228 Flammable solid.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

**Prevention:**
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P280 Wear protective gloves/eye protection/face protection.

**Response:**
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P305 + P351 + P38 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.
- P332 + P313 If skin irritation occurs: Get medical advice/attention.
- P337 + P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P370 + P378 In case of fire: Use for extinction: Special powder for metal fires.
- P370 + P378 In case of fire: Use for extinction: Dry sand.

**Disposal:**
- P501 Dispose of contents/container to an approved
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>7429-90-5</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>64742-48-9</td>
<td>&gt;= 20 - &lt; 30</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>Octadecanoic acid</td>
<td>57-11-4</td>
<td>&gt;= 5 - &lt; 10</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : Take the victim into fresh air.
    Do not leave the victim unattended.
    Move out of dangerous area.
    Show this material safety data sheet to the doctor in attendance.

If inhaled : Consult a physician after significant exposure.
    If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Wash off immediately with soap and plenty of water.
    If skin irritation persists, call a physician.
    If on skin, rinse well with water.
    If on clothes, remove clothes.

In case of eye contact : Immediately flush eye(s) with plenty of water.
    Flush eyes with water as a precaution.
    Remove contact lenses.
    Keep eye wide open while rinsing.
    If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
    Do not give milk or alcoholic beverages.
    Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

**Most important symptoms and effects, both acute and delayed**

- Causes skin irritation.
- Causes serious eye irritation.
- May cause damage to organs through prolonged or repeated exposure.

### SECTION 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**

- Dry sand
- Special powder against metal fire

**Unsuitable extinguishing media**

- Water
- Foam
- Carbon dioxide (CO2)
- ABC powder

**Further information**

- Standard procedure for chemical fires.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Special protective equipment for fire-fighters**

- Use personal protective equipment.
- Wear self-contained breathing apparatus for firefighting if necessary.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

- Evacuate personnel to safe areas.
- Use personal protective equipment.
- Use personal protective equipment.
- Avoid dust formation.
- Ensure adequate ventilation.
- Remove all sources of ignition.

**Environmental precautions**

- Prevent product from entering drains.
- Prevent further leakage or spillage if safe to do so.
- If the product contaminates rivers and lakes or drains inform respective authorities.

**Methods and materials for containment and cleaning up**

- Use mechanical handling equipment.
- Soak up with inert absorbent material (e.g. sand, silica gel,
Do not flush with water.
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion:
- Earthing of containers and apparatuses is essential.
- Take measures to prevent the build up of electrostatic charge.
- Use explosion-proof equipment.
- Avoid dust formation.
- Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling:
- Keep away from heat and sources of ignition.
- Avoid dust formation.
- Ensure adequate ventilation.
- Avoid formation of respirable particles.
- Do not breathe vapors/dust.
- Avoid contact with skin and eyes.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- Provide sufficient air exchange and/or exhaust in work rooms.
- Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage:
- Store in original container.
- Keep containers tightly closed in a cool, well-ventilated place.
- Keep container closed when not in use.
- Keep away from sources of ignition - No smoking.
- No smoking.
- Keep container tightly closed in a dry and well-ventilated place.
- Observe label precautions.
- Electrical installations / working materials must comply with the technological safety standards.

Technical measures/Precautions:
- Protect from humidity and water.
- Do not allow to dry.

Materials to avoid:
- Do not store together with oxidizing and self-igniting products.
- Never allow product to get in contact with water during
storage. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Further information on storage stability: No decomposition if stored and applied as directed.

### 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>Aluminum</td>
<td>7429-90-5</td>
<td>TWA (total dust)</td>
<td>50 Million particles per cubic foot</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable)</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (total dust)</td>
<td>15 mg/m³</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (total)</td>
<td>10 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (respirable fraction)</td>
<td>5 mg/m³</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (respirable fraction)</td>
<td>15 Million particles per cubic foot</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>1 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³ (Aluminum)</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Total)</td>
<td>15 mg/m³ (Aluminum)</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>5 mg/m³ (Aluminum)</td>
<td>OSHA P0</td>
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<td>TWA (total dust)</td>
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<td>OSHA Z-1</td>
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<td></td>
<td>TWA (respirable fraction)</td>
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<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Total dust)</td>
<td>15 mg/m³ (Aluminum)</td>
<td>OSHA P0</td>
</tr>
<tr>
<td>Ingredients</td>
<td>CAS-No.</td>
<td>Control parameters</td>
<td>Biological specimen</td>
<td>Sampling time</td>
</tr>
<tr>
<td>-------------</td>
<td>--------</td>
<td>--------------------</td>
<td>---------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>Methylhippuric acids</td>
<td>Urine</td>
<td>End of shift (As soon as possible)</td>
</tr>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>64742-48-9</td>
<td>TWA</td>
<td>500 ppm</td>
<td>2,000 mg/m³</td>
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<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>400 ppm</td>
<td>1,600 mg/m³</td>
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<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>TWA</td>
<td>100 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>655 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>435 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>435 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
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<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>655 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td>435 mg/m³</td>
</tr>
<tr>
<td>Octadecanoic acid</td>
<td>57-11-4</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

STAPA 4 X Aluminium Paste

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
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<td>1.0</td>
<td>04/30/2018</td>
<td>102000000304</td>
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<td>04/30/2018</td>
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</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylhippuric acids</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
</tr>
</tbody>
</table>

**Personal protective equipment**

**Respiratory protection**: Use suitable breathing protection if workplace concentration requires.

In the case of dust or aerosol formation use respirator with an approved filter.
Dust safety masks are recommended when the dust concentration is more than 10 mg/m³.

**Hand protection**

**Material**: Solvent-resistant gloves (butyl-rubber)

**Remarks**: Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The exact break through time can be obtained from the protective glove producer and this has to be observed. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Recommended preventive skin protection Skin should be washed after contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

**Eye protection**: Safety glasses

**Skin and body protection**: Long sleeved clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures:
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Pasty solid</td>
</tr>
<tr>
<td>Color</td>
<td>silver</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>137 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>30 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
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<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-flammability</td>
<td>not auto-flammable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>1.3 g/cm³</td>
</tr>
<tr>
<td>Solubility (ies)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive Vapors may form explosive mixture with air.</td>
</tr>
</tbody>
</table>

SECTION 10. STABILITY AND REACTIVITY

Reactivity:
No decomposition if stored and applied as directed.

Chemical stability:
No decomposition if stored and applied as directed.

Possibility of hazardous reactions:
Reacts with alkalis, acids, halogenes and oxidizing agents.
Contact with acids and alkalis may release hydrogen.
Mixture reacts slowly with water resulting in evolution of hydrogen.
Vapors may form explosive mixture with air.
Stable under recommended storage conditions.

Conditions to avoid:
- Do not allow to dry.
- Heat, flames and sparks.

Incompatible materials:
- Acids
- Bases
- Oxidizing agents
- Highly halogenated compounds

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

Ingredients:
Naphtha (petroleum), hydrotreated heavy:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity: LC50 (Rat): Test atmosphere: vapor
Remarks: An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg

Benzene, dimethyl-:
Acute dermal toxicity: Acute toxicity estimate: 1,100 mg/kg
Method: Converted acute toxicity point estimate

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

Ingredients:
Benzene, dimethyl-:
Result: Eye irritation
Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Ingredients:

Benzene, dimethyl-
Assessment: Harmful in contact with skin or if inhaled.

Germ cell mutagenicity
Not classified based on available information.

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 component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

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.

STOT-single exposure
Not classified based on available information.

Ingredients:

Benzene, dimethyl-
Assessment: May cause respiratory irritation.

STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure.
Ingredients:
Benzene, dimethyl-:
Assessment: May cause damage to organs through prolonged or repeated exposure.

Ingredients:
Benzene, dimethyl-:
Repeated dose toxicity - Assessment: Harmful in contact with skin or if inhaled.

Aspiration toxicity
Not classified based on available information.

Ingredients:
Benzene, dimethyl-:
May be fatal if swallowed and enters airways.

Further information
Ingredients:
Naphtha (petroleum), hydrotreated heavy:
Remarks: Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Other adverse effects
No data available

Ingredients:
Naphtha (petroleum), hydrotreated heavy:
Additional ecological information: No data available
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues: Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
In accordance with local and national regulations.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.
In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
UN/ID No.: UN 1325
Proper shipping name: Flammable solid, organic, n.o.s. (Aluminium pigment paste)
Class: 4.1
Packing group: II
Labels: Flammable Solid
Packing instruction (cargo aircraft): 448
Packing instruction (passenger aircraft): 445

IMDG-Code
UN number: UN 1325
Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (Aluminium pigment paste)
Class: 4.1
Packing group: II
Labels: 4.1
EmS Code: F-A, S-G
Marine pollutant: no
Remarks: IMDG Code segregation group 15 - Powdered metals

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

Domestic regulation
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>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>100</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards
- Flammable (gases, aerosols, liquids, or solids)
- Skin corrosion or irritation
- Serious eye damage or eye irritation
- Specific target organ toxicity (single or repeated exposure)

SARA 313
- The following components are subject to reporting levels established by SARA Title III, Section 313:
  - Aluminum 7429-90-5 >= 50 - < 70 %
  - Benzene, dimethyl- 1330-20-7 >= 10 - < 20 %

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):
  - Benzene, dimethyl- 1330-20-7 17.95 %
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):
Benzene, dimethyl- 1330-20-7 17.95 %

Clean Water Act
The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
Benzene, dimethyl- 1330-20-7 17.95 %
The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
Benzene, dimethyl- 1330-20-7 17.95 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations
Massachusetts Right To Know
Aluminum 7429-90-5
Benzene, dimethyl- 1330-20-7
Octadecanoic acid 57-11-4

Pennsylvania Right To Know
Aluminum 7429-90-5
Naphtha (petroleum), hydrotreated heavy 64742-48-9
Benzene, dimethyl- 1330-20-7
Octadecanoic acid 57-11-4

California Prop. 65
WARNING: This product can expose you to chemicals including lead and cadmium, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances
Aluminum 7429-90-5
Benzene, dimethyl- 1330-20-7
California Permissible Exposure Limits for Chemical Contaminants

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>7429-90-5</td>
</tr>
<tr>
<td>Benzene, dimethyl</td>
<td>1330-20-7</td>
</tr>
</tbody>
</table>

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

- **DSL**: All components of this product are on the Canadian DSL
- **TSCA**: On TSCA Inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION**

**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA : 8-hour time weighted average
OSHA P0 / STEL : Short-term exposure limit
OSHA Z-1 / TWA : 8-hour time weighted average
OSHA Z-3 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% response;
growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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