SAFETY DATA SHEET

SDS No.1001-0202

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Molecular Sieve 5A
NAME OF MANUFACTURER: GL Sciences Inc.
ADDRESS: 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan
CHARGE SECTION: International Sales Section
TELEPHONE No.: +81-3-5323-6620
FACSIMILE No.: +81-3-5323-6621
PRODUCT No.: 1001-11503, 1001-11506, 1001-11508, 1001-11553, 1001-11556, 1001-11558, 1001-11574, 1001-11576, 1001-11578, 1003-
SDS No.: 1001-0202

Research use only.

2. HAZARDS IDENTIFICATION

This product is one of the synthetic zeolite; calcined mixture of clay mineral and sodium aluminosilicate which includes such as sodium oxide and aluminum oxide as a constituent elements, and has a unique three-dimensional interconnecting network.

This product indicates different characteristics from each constituent elements.

So we show the information of this synthetic zeolite below.

Although the column packed with is not dangerous goods, we show some data about this packing material for the information supplement below.

<GH5A>

GHS CLASSIFICATION: Classification not possible
HAZARDS SYMBOL: - - -
SIGNAL WORD: - - -
HAZARD STATEMENTS: - - -
PRECAUTIONARY STATEMENTS: - - -
OTHER INFORMATIONS: May increase product's temperature until 100 degrees C by adsorption heat when contacting with water/moisture. Cool this with plenty of water if necessary.
10 % slurry of this product indicates pH 8 to 12.
May cause eye, skin irritation and respiratory inflammation through prolonged or repeated exposure.
May cause cancer through prolonged or repeated exposure.
Perform necessary measures depending on materials remaining in this product.
Dispose of contents/container in accordance with all applicable regulations.

MOST IMPORTANT HAZARDS: Eye irritation, skin irritation, digestive tract irritation, respiratory tract irritation, skin burn, cancer.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY: Molecular Sieve 5A
SYNONYMS: Sodium aluminosilicate
CHEMICAL FORMULA: Mixture

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CONTENT</th>
<th>CHEMICAL FORMULA</th>
<th>CAS NUMBER</th>
<th>TSCA INVENTORY</th>
<th>EINECS No.</th>
<th>EC INDEX No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon dioxide (synthetic)</td>
<td>&lt; 65 %</td>
<td>SiO2</td>
<td>7631-86-9</td>
<td>Listed</td>
<td>231-545-4</td>
<td>Not established</td>
</tr>
<tr>
<td>Aluminum oxide (non-fibrous)</td>
<td>&lt; 40 %</td>
<td>Al2O3</td>
<td>1344-28-1</td>
<td>Listed</td>
<td>215-691-6</td>
<td>Not established</td>
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<tr>
<td>Sodium oxide</td>
<td>&lt; 30 %</td>
<td>Na2O</td>
<td>1313-59-3</td>
<td>Listed</td>
<td>215-208-9</td>
<td>Not established</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>&lt; 20 %</td>
<td>CaO</td>
<td>1305-78-8</td>
<td>Listed</td>
<td>215-138-9</td>
<td>Not established</td>
</tr>
<tr>
<td>Magnesium oxide</td>
<td>&lt; 5 %</td>
<td>MgO</td>
<td>1309-48-4</td>
<td>Listed</td>
<td>215-171-9</td>
<td>Not established</td>
</tr>
<tr>
<td>Silica (crystalline)</td>
<td>&lt; 5 %</td>
<td>SiO2</td>
<td>14808-60-7</td>
<td>Listed</td>
<td>238-878-4</td>
<td>Not established</td>
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</tbody>
</table>
4. FIRST AID MEASURES

GENERAL ADVICE: Wash off immediately with soap and plenty of water. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

INHALATION: Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.

SKIN CONTACT: Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritant persists, consult a physician.

EYE CONTACT: Remove any contact lenses at once. Flush eyes well with flooding large amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritant persists, consult a physician.

INGESTION: Rinse mouth, give plenty of water at least 2 cups. Never give anything by mouth to an unconscious person. Consult a physician immediately.

SPECIAL CAUTIONS FOR DOCTOR: This is a drying agent, produce heat by adsorbing moisture/water. In some case, used product may include dangerous materials.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical powder, foam, water spray

FIRE & EXPLOSION HAZARDS: Toxic, irritating, dust, fumes or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Firemen should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus. You should tell to Firemen what used product include.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Remove ignition sources and ventilate the area.
In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
A solution which contact with this product is pH 8 -12.

ENVIROMENTAL PRECATIONS: Prevent spills from entering sewers, watercourses or low areas.

METHODS FOR CLEAN UP: Do not touch spilled material without suitable protection. After material is completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

HANDLING: This product has strongly moisture absorbency. Handle this quickly after opening to avoid heating.
Pay attention when opening this material due to its inner pressure decreasing/increasing by changing temperature.
Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Handle material with suitable protection.
After using this product, dispose of contents/container in accordance with all applicable regulations and appropriate ways.

STORAGE: Store away from moisture and water in well-ventilated dry place.
Keep container tightly closed.

INCOMOPATIBLE PRODUCTS: Water, moisture

8. EXPOSURE CONTROL/PERSOANAL PROTECTION

ENGINEERING MEASURES: Use exhaust ventilation to keep airborne concentrations below exposure limits.
Use only with adequate ventilation.

VENTILATION: Local Exhaust; Necessary, Mechanical(General); Recommended

PERSONAL PROTECTION

RESPRATORY PROTECTION: Safety mask, Dust mask

HAND PROTECTION: Protective gloves

EYE PROTECTION: Safety glasses(goggles)

SKIN PROTECTION: Protective clothing
PRODUCT NAME : Molecular Sieve 5A

CONTROL PARAMETERS

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>OSHA PEL</th>
<th>NIOSH REL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicon dioxide</td>
<td>Not established</td>
<td>15mg/m³(total)</td>
<td>6mg/m³</td>
</tr>
<tr>
<td>(synthetic)</td>
<td></td>
<td>5mg/m³(resp)</td>
<td></td>
</tr>
<tr>
<td>Aluminum oxide</td>
<td>1mg/m³(resp)</td>
<td>15mg/m³(total)</td>
<td>Not established</td>
</tr>
<tr>
<td>(non-fibrous)</td>
<td></td>
<td>5mg/m³(resp)</td>
<td></td>
</tr>
<tr>
<td>Sodium oxide</td>
<td>Not established</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>2mg/m³</td>
<td>5mg/m³</td>
<td>2mg/m³</td>
</tr>
<tr>
<td>Magnesium oxide</td>
<td>10mg/m³(inh)</td>
<td>15mg/m³(total)</td>
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</tr>
<tr>
<td>Silica (crystalline)</td>
<td>0.025mg/m³(resp)</td>
<td>4.2mg/m³(total)</td>
<td>Ca TWA 0.05 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.4mg/m³(resp)</td>
<td></td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE** : Brown

**SHAPE** : Solid, granule

**ODOR** : No data available

**pH** : 8 - 12 (10 % slurry)

**BOILING POINT** : No data available

**MELTING POINT** : No data available

**FLASH POINT** : Not applicable

**FLAMMABILITY** : Non combustible

**AUTOIGNITION TEMPERATURE** : No data available

**VAPOR PRESSURE** : No data available

**VAPOR DENSITY** : No data available

**DENSITY** : 600 - 900 g/L

**SOLUBILITY IN**

- Water : Insoluble
- Organic solvent : Insoluble

**PARTITION COEFFICIENT: n-octanol/water** : No data available

**DECOMPOSITION TEMPERATURE** : No data available

10. STABILITY AND REACTIVITY

**REACTIVITY** : It is easy absorbing moisture in the air, and heat until 100 degrees C in some case.

**CHEMICAL STABILITY** : Stable under recommended storage conditions.

**CONDITION TO AVOID** : Moisture, contact with materials such as hydro carbons and hydro chlorine.

**INCOMPATIBLE MATERIALS** : Moisture, water

**HAZARDOUS DECOMPOSITION PRODUCTS** : No data available

11. TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY-oral** : rat LD50>32000mg/kg

**ACUTE TOXICITY-dermal** : rabbit LD50>2000mg/kg

**ACUTE TOXICITY-inhalation** : rat LD50: No data available

**CHRONIC/PROLONGED TOXICITY** : May cause eye, skin irritation and respiratory inflammation through prolonged or repeated exposure. May cause cancer through prolonged or repeated exposure.

12. ECOLOGICAL INFORMATION

**ECOTOXICITY** : No data available

**BIODEGRADABILITY** : No data available

**BIOACCUMULATION POTENTIAL** : No data available

**MOBILITY IN SOIL** : No data available

**OTHER ADVERSE EFFECTS** : Not listed in Montreal Protocol.
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13. DISPOSAL INFORMATION
Dispose in a hazardous-waste site in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environment agency for specific rules).

14. TRANSPORT INFORMATION
- IATA : Not dangerous goods
- ADR/RID : Not dangerous goods
- DOT : Not dangerous goods
- MARINE POLLUTANT : No

15. REGULATORY INFORMATION
- US REGULATIONS : Labeling according to US Directives; See section 2
- EU REGURATIONS : Labeling according to EC Directives; See section 2

16. OTHER INFORMATION
NOTICE:
The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

Attention:
This product in terms of chemical identity and the unit amount provide is intended for use in chemical analysis and not for human consumption, nor any other purpose.