

SAFETY DATA SHEET

SDS No.5010-29900

Revised date September 13, 2021 1/5 page

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CO2 Trap Cartridge Set
NAME OF SUPPLIER : 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. : 5010-29900、5010-
SDS No. : 5010-29900
Research use only.

2. HAZARDS IDENTIFICATION

This product consists of three different type cartridges, on lure stop valve and a plug.

A lure stop valve and a plug are articles and are not dangerous goods.

Three different type cartridges are used for removing moisture, removing carbon dioxide and moisture protection.

These cartridges are packed with each packing material using for such as chromatography analysis, researches and developments.

Although packing materials will be unexpected to leak from cartridges, we show some data about these packing materials for the information supplement below.

《Moisture removal cartridge》

GHS CLASSIFICATION : Classification not possible
HAZARDS SYMBOL : - - -
SIGNAL WORD : - - -
HAZARD STATEMENTS : - - -
PRECAUTIONARY STATEMENTS : - - -
OTHER INFORMATIONS : Packing materials may be harmful if inhalation or digestion.
Packing materials may cause irritation if contact with eyes, skin or mucosa
Packing materials may cause to induce chest pain and breathe shortness.
Dispose of contents/container in accordance with all applicable regulations.

《CO2 absorbing cartridge [Ascarite II]》

GHS CLASSIFICATION : Skin corrosion/irritation : Category 1
Eye damage/irritation : Category 1
Specific target organ toxicity (Single exposure) : Category 1(respiratory system)
Hazardous to the aquatic environment - Acute hazard : Category 3

HAZARDS SYMBOL :



SIGNAL WORD : Danger

HAZARD STATEMENTS :

H314 Cause severe skin burns and eye damage
H318 Cause serious eye damage
H370 Cause damage to organs
H402 Harmful to aquatic life

PRECAUTIONARY STATEMENTS :

P260 Do not breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P310 Immediately call a POISON CENTER or doctor.

| | |
|----------------|--|
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303+P361+P353 | IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water. |
| P363 | Wash contaminated clothing before reuse. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| 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+P311 | IF exposed or concerned: Call a POISON CENTER or doctor. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with all applicable regulations. |

《Moisture protection cartridge [Active alumina]》

GHS CLASSIFICATION : Specific target organ toxicity (Single exposure) : Category 3(respiratory irritation)
 Specific target organ toxicity (Repeated exposure) : Category 1

HAZARDS SYMBOL :



SIGNAL WORD : Danger

HAZARD STATEMENTS :

H335 : May cause respiratory irritation
 H372 : Cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENTS :

P260 : Do not breathing dust/fume/gas/mist/vapours/spray.
 P264 : Wash hands thoroughly after handling.
 P270 : Do not eat, drink or smoke when using this product.
 P304+P340 : IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P314 : Get medical attention if you feel unwell.
 P405 : Store locked up.
 P501 : Dispose of contents/container in accordance with all applicable regulations.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : Combination

《Moisture removal cartridge》

| CHEMICAL NAME | CONTENT | CHEMICAL FORMULA | CAS No. | TSCA INVENTORY | EINECS No. | EC INDEX No. |
|---------------|---------|------------------|-----------|----------------|------------|-----------------|
| Silica gel | -- | SiO ₂ | 7631-86-9 | Listed | 231-545-4 | Not established |

《CO2 absorbing cartridge [Ascarite II]》

| CHEMICAL NAME | CONTENT | CHEMICAL FORMULA | CAS No. | TSCA INVENTORY | EINECS No. | EC INDEX No. |
|------------------|-----------|---|-----------|----------------|-----------------|-----------------|
| Sodium hydroxide | 90 - 95 % | NaOH | 1310-73-2 | Listed | 215-185-5 | 011-002-00-6 |
| Vermiculite | 5 - 10 % | (Mg,Fe) ₃ (Si,Al,Fe) ₄ O ₁₀ (OH) ₂ ·4H ₂ O | 1318-00-9 | Not listed | Not established | Not established |

《Moisture removal cartridge》

| CHEMICAL NAME | CONTENT | CHEMICAL FORMULA | CAS No. | TSCA INVENTORY | EINECS No. | EC INDEX No. |
|-----------------|---------|--------------------------------|-----------|----------------|------------|-----------------|
| Aluminium oxide | -- | Al ₂ O ₃ | 1344-28-1 | Listed | 215-691-6 | Not established |

4. FIRST AID MEASURES

- GENERAL ADVICE : If fragments/respirable dust contacts with eyes or skin, 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. If irritation persists, consult a physician.
- INHALATION : Move victim to fresh air and gargle. 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 irritation 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 irritation persists, consult a physician.
- INGESTION : Rinse mouth, give plenty of water to vomit. Never give anything by mouth to an unconscious person. Consult a physician.
- MOST IMPORTANT SYMPTOMS AND EFFECTS : Shreds and dusts may cause irritation of mucous membranes, respiratory tract, skin and eyes.

5. FIRE FIGHTING MEASURES

- EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water spray
- FIRE & EXPLOSION HAZARDS : Toxic and irritating dust, fumes or smoke may be emitted.
- SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS : Fireman should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- PERSONAL PRECAUTIONS : Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising mist/gas/vapour and avoid contact with skin and eyes.
- ENVIRONMENTAL PRECAUTIONS : Prevent spills from entering sewers, watercourses or low areas. Comply with local disposal regulations.
- METHODS FOR CLEANING 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 : Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Handle this product with appropriate protective equipment. CO2 absorbing cartridge [Ascarite II] may react with acid compound due to it is basic material.
- STORAGE : Store away from sunlight in a cool place under stable temperature. Keep container tightly closed.
- INCOMPATIBLE PRODUCTS : Oxidizers and acids, moisture

8. EXPOSURE CONTROL/PERSONAL PROTECTION

- ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits. Use adequate ventilation.
- VENTILATION : Local Exhaust ; Recommended, Mechanical(General) ; Recommended
- CONTROL PARAMETERS :

| Components | ACGIH | OSHA | NIOSH |
|------------------|---|---|-----------------|
| Silica gel | 3 mg/m ³ (resp. dust) 6 mg/m ³ (total) | 80 mg/m ³ /%SiO ₂ (other dust) | Not established |
| Sodium hydroxide | | 2 mg/m ³ | |
| Vermiculite | | Not established | |
| Aluminium oxide | Not established | 15 mg/m ³ (total) 5 mg/m ³ (resp.) | Not established |

PERSONAL PROTECTION

- RESPRATORY PROTECTION : Safety mask
- HAND PROTECTION : Chemical resistant gloves
- EYE PROTECTION : Safety glasses(goggles)
- SKIN PROTECTION : Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

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|--|--|
| PHYSICAL STATE | : Solid |
| COLOUR | : White(Silica gel), light-brown(Ascarite II), white to light-yellow(Active alumina) |
| ODOR | : Odorless |
| MELTING POINT / FREEZING POINT | : No data available |
| BOILING POINT OR INITIAL BOILING POINT AND BOILING RANGE | : No data available |
| FLAMMABILITY | : No data available |
| LOWER AND UPPER EXPLOSION LIMIT / FLAMMABILITY LIMIT | : No data available |
| FLASH POINT | : No data available |
| AUTO-IGNITION TEMPERATURE | : No data available |
| DECOMPOSITION TEMPERATURE | : No data available |
| pH | : No data available |
| KINEMATIC VISCOSITY | : Not applicable |
| SOLUBILITY | : Insoluble |
| PARTITION COEFFICIENT | |
| n-octanol/water (log value) | : No data available |
| VAPOUR PRESSURE | : No data available |
| DENSITY AND/OR RELATIVE DENSITY | : No data available |
| RELATIVE VAPOUR DENSITY | : Not applicable |
| PARTICLE CHARACTERISTICS | : No data available |

10. STABILITY AND REACTIVITY

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|----------------------------------|---|
| REACTIVITY | : It is easy to absorb moisture in the air, and carbon dioxide. |
| CHEMICAL STABILITY | : Stable under recommended storage conditions. |
| CONDITION TO AVOID | : Sunlight, heat, moisture, CO ₂ , oxidizers, acids |
| INCOMPATIBLE MATERIALS | : Strong oxidizers and strong acids |
| HAZARDOUS DECOMPOSITION PRODUCTS | : CO, CO ₂ , silicone oxides |

11. TOXICOLOGICAL INFORMATION

| | |
|--|--|
| ACUTE TOXICITY | : Active alumina; oral- rat LD50>5,000mg/kg(IUCLID,2000) |
| SKIN CORROSION/IRRITATION | : NaOH; irritating to human skin(SIDS,2009) |
| EYE DAMAGE/EYE IRRITATION | : NaOH; serious damage to human eyes(ACGIH(7th,2001), DFGOT vol.12 (1999)) |
| GERM CELL MUTAGENICITY | : NaOH; Negative(SIDS,2009) |
| CARCINOGENICITY | : Active alumina; A4(ACGIH) |
| REPRODUCTIVE TOXICITY | : No data available |
| SPECIFIC TARGET ORGAN TOXICITY (Single exposure) | : NaOH; affect to respiratory system(PATTY(5th,2001), SIDS(2009), DFGOT vol.12(1999)) |
| SPECIFIC TARGET ORGAN TOXICITY (Repeated exposure) | : NaOH; Affect to respiratory system(ACGIH(7th,2001), SIDS(2009)) Active alumina; damage to human lungs(EHC,1997) |
| ASPIRATION TOXICITY | : No data available |

12. ECOLOGICAL INFORMATION

| | |
|---|--|
| Hazardous to the aquatic environment - Acute hazard | : NaOH; Stoop water flea LC50=40 mg/L/48h(SIDS,2004) |
| BIODEGRADABILITY | : No data available |
| BIOACCUMULATION POTENTIAL | : No data available |
| MOBILITY IN SOIL | : No data available |
| OTHER ADVERSE EFFECTS | : Not listed in Montreal Protocol list. |

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****International Regulations**

Maritime regulations : Conform to the provisions of IMO.

UN No. : 1823

Proper Shipping Name : SODIUM HYDROXIDE, SOLID

Class : 8

Packing Group : II

Marine Pollutant : Not applicable

Aviation regulations : Conform to the provisions of ICAO/IATA.

UN No. : 1823

Proper Shipping Name : Sodium Hydroxide, Solid

Class : 8

Packing Group : II

15. REGULATORY INFORMATION

US REGULATIONS : Labeling according to EC Directives; See section 2

EU REGULATIONS : 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.