

SAFETY DATA SHEET

SDS No.1050-24011

Revised Date June 9, 2016

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : 2 Layer cartridge(10% silver nitrate/44% sulfuric acid-impregnated silica gel)
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. : 1050-24011
SDS No. : 1050-24011
Research use only.

2. HAZARDS IDENTIFICATION

GHS CLACCIFICATION : Acute toxicity - inhalation - : Category 3
Skin corrosion/irritation : Category 1
Eye damage/irritation : Category 1
Reproductive toxicity : Category 2
Specific target organ toxicity (Single exposure) : Category 1<blood system, respiratory tract system>
Specific target organ toxicity (Repeated exposure) : Category 1<respiratory tract system, lungs, kidneys, blood system>
Hazardous to the aquatic environment - Acute hazard : Category 2
Hazardous to the aquatic environment - Chronic hazard : Category 2

HAZARDS SYMBOL :



SIGNAL WORD : Danger

HAZARD STATEMENTS :

H331 Toxic if inhaled
H314 Cause severe skin burns and eye damage
H318 Cause serious eye damage
H361 Suspected of damaging fertility or the unborn child
H370 Cause damage to organs <blood system, respiratory tract system>
H372 Cause damage to organs through prolonged or repeated exposure <respiratory tract system, lungs, kidneys, blood system>
H401 Toxic to aquatic life
H411 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS :

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
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/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor.
P314 Get medical advice/attention if you feel unwell.

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 attention.
P363	Wash contaminated clothing before use.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container at a disposal facility in accordance with local regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY : 2 Layer cartridge(10% silver nitrate/44% sulfuric acid-impregnated silica gel)
 SYNONYMS : - - -
 CHEMICAL FOMULA : Combination of 4 components

CHEMICAL IDENTITY	CONTENT	CHEMICAL FOMULA	CAS No.	TSCA INVENTORY	EINECS No.	EC INDEX No.
Silica gel	65.4 %	SiO ₂	7631-86-9	Listed	231-545-4	Not established
Sulfuric acid	20.8 %	H ₂ SO ₄	7664-93-9	Listed	231-639-5	016-020-00-8
Silver Nitrate	3.2 %	HNO ₃	7761-88-8	Listed	231-853-9	047-001-00-2
Sodium sulfate, anhydrous	10.5 %	Na ₂ SO ₄	7757-82-6	Listed	231-820-9	Not established

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 or water or shower. Use soap to help assure removal. 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. Consult a physician.

INGESTION : Rinse mouth, give plenty of water to dilute the substance. Do not induce vomiting. Never give anything by mouth to unconscious person. Consult a physician.

5. FIRE FIGHTING MEASURES

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

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

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS : Fireman should wear appropriate 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 dust and avoid contact with skin and eyes.

ENVIROMENTAL PRECATIONS : Prevent entering dusts to environment.
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 equipments.

STORAGE : Store away from sunlight in well-ventilated dry place.

INCOMOPATIBLE PRODUCTS : Strong acids, oxidizers, strong bases, reductants

8. EXPOSURE CONTROL/PERSONAL PROTECTION

- ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits. Use adequate ventilation.
- VENTILATION : Local Exhaust ; Necessary, Mechanical(General) ; Recommended
- PERSONAL PROTECTION
- Respiratory protection : NIOSH/MSHA or European Standard EN149 approved respirator
- HAND PROTECTION : Chemical resistant gloves
- EYE PROTECTION : Safety glasses(goggles)
- SKIN PROTECTION : Protective clothing

CONTROL PARAMETERS

CONTENT	ACGIH TLV	OSHA PEL	NIOSH REL
Silica gel	3mg/m ³ (as other respirable dust)	80 mg/m ³ /%SiO ₂ +2 (as amorphous silica)	6 mg/m ³ (as amorphous silica)
Sulfuric acid	1mg/m ³	0.2mg/m ³	1mg/m ³
Silver Nitrate	0.01mg/m ³ (as Ag)	0.01mg/m ³ (as Ag)	0.01mg/m ³ (as Ag)

9. PHYSICAL AND CHEMICAL PROPERTIES

- APPEARANCE : white to light white grayish (Silver nitrate-impregnated silica gel)
white to light yellowish (Sulfuric acid-impregnated silica gel)
- SHAPE : Solid (powder)
- ODOR : Odorless
- pH : Strong acid (Sulfuric acid-impregnated silica gel in aquatic solution),
- BOILING POINT : No data available
- MELTING POINT : No data available
- FLASH POINT : No data available
- FLAMMABILITY : No data available
- AUTOIGNITION TEMPERATURE : No data available
- VAPOR PRESSURE : No data available
- SPACIFIC GRAVITY (DENSITY) : No data available
- SOLUBILITY IN
- Water : insoluble
- Organic solvent : insoluble

10. STABILITY AND REACTIVITY

- REACTIVITY : Stable under recommended condition
- CHRMICAL STABILITY : Hygroscopicity. Potassium hydroxide/Sulfuric acid-impregnated silica gel is easy to absorb moisture.
- CONDITION TO AVOID : Sunlight, heat, moisture, contact with incompatible materials, raising dust
- INCOMPATIBLE MATERIALS : Strong acids, oxidizers, strong bases, reductants
- HAZARDOUS DECOMPOSITION PRODUCTS : Nitrogen oxides, sulfur oxides

11. TOXICOLOGICAL INFORMATION

- ACUTE TOXICITY : Sulfuric acid-impregnated silica gel is classified in Category 3.(0.78mg/L, calculated)
- SKIN CORROSION/IRRITATION : (Silver nitrate) Skin; marmot; may cause skin corrosive (CERI hazard data 2001-57,2002)
(Sulfuric acid) pH <1, corrosive material
- EYE DAMAGE/EYE IRRITATION : (Sulfuric acid) rabbit; 5% solution - moderate, 10 % solution - severe irritation (SIDS,2001)
(Silver nitrate) Eye; rabbit; moderate to severe irritation (CERI hazard data 2001-57,2002)
- SENSITIZATION : No data available
- GERM CELL MUTAGENICITY : No data available
- CARCINOGENICITY : Classifications of each component are not possible.
- REPRODUCTIVE TOXICITY : (Silver nitrate) damage to testicle.(IUCLID,2000)

SPECIFIC TARGET ORGAN TOXICITY -single exposure-

: (Sulfuric acid) damage to human respiratory tract and lungs(DFGOT(2001), ATSDR(1998)).

(Silver nitrate) damage to human respiratory tract and blood system(PATY (4th,2000),ICSC(J)(1998),CERI hazard data 2001-57(2002)).

SPECIFIC TARGET ORGAN TOXICITY -repeated exposure-

: (Sulfuric acid) animals; damage to respiratory system and lungs(SIDS(2001), ATSDR(1998)).

(Silver nitrate) damage to human respiratory system, kidneys and cardiovascular system (CERI hazard data 2001-57,2002).

ASPIRATION TOXICITY

: (Potassium hydroxide) inhalation is cause of pneumonia and progress to death (ACGIH,2001).

12. ECOLOGICAL INFORMATION

Hazardous to the aquatic environment - Acute hazard

: Crustacean; Daphnia magna, EC50=0.0006 mg/L/48h (CERI hazard data,2002)

Hazardous to the aquatic environment - Chronic hazard

: Silver compound is a metal compound and its behavior under water is unclear. BCF=600.

BIODEGRADABILITY : No data available

BIOACCUMULATION POTENTIAL : There is a bioaccumulation with Silver nitrate (BCF=600).

MOBILITY IN SOIL : No data available

OZONE LAYER EFFECTS : These components are not listed in Montreal Protocol.

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

UN NUMBER : 3260

UN PROPER SHIPPING NAME : Corrosive solid, acidic, inorganic, N.O.S (sulfuric acid-impregnated silica gel, silver nitrate-impregnated silica gel)

CLASS or DIVISION : Class 8, corrosive solid

PACKING GROUP : III

ADR/RID : 3260, Corrosive Solids

DOT : 3260, Corrosive Solids

MARINE POLLUTANT : No

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.