

SAFETY DATA SHEET

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SDS No. Eternal-Element-ET-GaM-202501
Product Number Eternal-Element-ET-GaM-202501

Gallium

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Gallium
Product Number : ET-GaM-202501
Brand : Eternal-Element
CAS-No. : 7440-55-3

1.2 Details of the supplier of the safety data sheet

Company : Shanghai Sheeny Metal Mateirals Co.,Ltd.
Room 210, Kedi Building,
No. 688 Huajiang Road, Jiading District,
SHANGHAI
201800 SHANGHAI
CHINA

上海斯年金属材料有限公司

上海市嘉定区华江公路688号凯迪大厦
210室
邮政编码 : 201800

Telephone : +86 16602150044
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1.3 Emergency telephone

Emergency Phone # : +86 4006632276

1.4 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For R&D use only. Not for pharmaceutical, household or other

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uses.

2. HAZARDS IDENTIFICATION

Emergency Overview

| | | |
|-------------------|---|------------|
| Appearance | : | solid |
| Color | : | light gray |

May be corrosive to metals. Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life with long lasting effects.

GHS Classification

| | | |
|------------------------------------|---|------------|
| Corrosive to Metals | : | Category 1 |
| Acute toxicity (Oral) | : | Category 4 |
| Skin corrosion/irritation | : | Category 1 |
| Serious eye damage/eye irritation | : | Category 1 |
| Short-term (acute) aquatic hazard | : | Category 3 |
| Long-term (chronic) aquatic hazard | : | Category 3 |

GHS label elements

| | | |
|-------------------|---|--|
| Hazard pictograms | : |  |
| Signal Word | : | Danger |
| Hazard Statements | : | H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H412 Harmful to aquatic life with long lasting effects. |

| | | |
|--------------------------|---|---|
| Precautionary Statements | : | Prevention: P234 Keep only in original container. P260 Do not breathe dust. P264 Wash skin 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. |
|--------------------------|---|---|

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
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 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.

Storage:

P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard Statements

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements none

Physical and chemical hazards

May be corrosive to metals.

Health hazards

Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage.

Environmental hazards

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|---------------|-----------|-----------------------|
| gallium | 7440-55-3 | <= 100 |

4. FIRST AID MEASURES

General advice : Show this material safety data sheet to the doctor in attendance.

If inhaled : After inhalation: fresh air.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact : After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed : After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards during fire fighting : Not combustible.

Ambient fire may liberate hazardous vapours.

Hazardous combustion products : gallium oxides

Specific extinguishing methods : Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:
Avoid inhalation of dusts.
Avoid substance contact.
Ensure adequate ventilation.
Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
For personal protection see section 8.

Environmental precautions : Do not let product enter drains.

Methods and materials for containment and cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

7. HANDLING AND STORAGE

Handling

For precautions see section 2.2.

Avoidance of contact : Metals

Storage

Conditions for safe storage : No metal containers.

Further information on storage conditions : Tightly closed.
Dry.

Storage class : 8A, Combustible, corrosive hazardous materials

Recommended storage temperature : 2 - 8 °C

Packaging material : Suitable material: LDPE Bottle/Jar

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : No data available

Personal protective equipment

| | |
|--------------------------|--|
| Respiratory protection | : Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |
| Eye/face protection | : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses |
| Skin and body protection | : protective clothing |
| Hand protection | |
| Material | : Nitrile rubber |
| Break through time | : 480 min |
| Glove thickness | : 0.11 mm |
| Protective index | : Full contact |
| Manufacturer | : KCL 741 Dermatril® L |
| Material | : Nitrile rubber |
| Break through time | : 480 min |
| Glove thickness | : 0.11 mm |
| Protective index | : Splash contact |
| Manufacturer | : KCL 741 Dermatril® L |
| Remarks | : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de). |
| Hygiene measures | : Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance | : solid |
| Color | : light gray |
| Odor | : No data available |
| Odor Threshold | : No data available |
| pH | : No data available |
| Melting point/ range | : 29.8 °C Method: lit. |
| Boiling point/boiling range | : 2,403 °C Method: lit. |
| Flash point | : Not applicable |
| Evaporation rate | : No data available |
| Burning rate | : No data available |
| Upper explosion limit / Upper flammability limit | : No data available |
| Lower explosion limit / Lower flammability limit | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density | : No data available |
| Relative density | : No data available |
| Density | : 5.904 g/mL (25 °C) Method: lit. |
| Solubility(ies) | |
| Water solubility | : 0.00005 g/l (20 °C) pH: 5.4 - 6 Method: OECD Test Guideline 105 GLP: yes |
| Partition coefficient: n-octanol/water | : Not applicable for inorganic substances |
| Autoignition temperature | : No data available |
| Decomposition temperature | : No data available |

| | |
|--------------------------|--------------------------------|
| Viscosity, dynamic | : No data available |
| Viscosity, kinematic | : No data available |
| Flow time | : No data available |
| Explosive properties | : Not classified as explosive. |
| Oxidizing properties | : none |
| Molecular weight | : 69.72 g/mol |
| Metal corrosion rate | : May be corrosive to metals. |
| Particle characteristics | |
| Particle size | : No data available |

10. STABILITY AND REACTIVITY

| | |
|------------------------------------|---|
| Reactivity | : No data available |
| Chemical stability | : The product is chemically stable under standard ambient conditions (room temperature) . |
| Possibility of hazardous reactions | : Exothermic reaction with: Chlorine Bromine halogens Generates dangerous gases or fumes in contact with: Bases Risk of explosion with: hydrogen peroxide with Hydrogen chloride gas |
| Conditions to avoid | : no information available |
| Incompatible materials | : Metals |
| Hazardous decomposition products | : In the event of fire: see section 5 |

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 300 - < 2,000 mg/kg
(OECD Test Guideline 423)

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - In vitro study

Result: No skin irritation - 60 min
(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - In vitro study

Result: No eye irritation - 28 min
(OECD Test Guideline 492)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: Not a skin sensitizer.

(OECD Test Guideline 429)

Germ cell mutagenicity

Test system: S. typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

RTECS: LW8600000

Cough, Shortness of breath, Headache, Nausea, Vomiting, metallic taste, Dermatitis, bone marrow depression

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

Handle in accordance with good industrial hygiene and safety practice.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

gallium:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 14.96 mg/l
End point: Immobilization
Exposure time: 48 h

Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 14.65 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Persistence and degradability

Components:

gallium:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

gallium:

Partition coefficient: n-octanol/water : Remarks: Not applicable for inorganic substances

Mobility in soil

No data available

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Offer surplus and non-recyclable solutions to a licensed disposal company.

14. TRANSPORT INFORMATION

International Regulations**IATA-DGR**

UN/ID No. : UN 2803
Proper shipping name : Gallium
Class : 8
Packing group : III
Labels : Class 8 - Corrosive substances
Packing instruction (cargo aircraft) : 867
Packing instruction (passenger aircraft) : 867

IMDG-Code

UN number : UN 2803
Proper shipping name : GALLIUM
Class : 8
Packing group : III
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : no

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

Not applicable for product as supplied.

National regulation**GB 6944/12268**

UN number : UN 2803
Proper shipping name : GALLIUM
Class : 8
Packing group : III
Labels : 8

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

National regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218) : Not listed

Hazardous Chemicals for Priority Management under SAWS : Not listed

Regulations on Occupational Labor Protection in the workplaces where Toxic Substances Are Used

Catalogue of Highly Toxic Chemicals : Not listed

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals for Import and Export : Not listed

Regulation on the Administration of Precursor Chemicals

Catalogue and Classification of Precursor Chemicals : Not listed

16. OTHER INFORMATION

Revision Date : 2025/01/02

Further information

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Eternal-Element Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www. eternal-element.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Date format : yyyy/mm/dd

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals 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; WHMIS - Workplace Hazardous Materials Information System

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