# OTTO CHEMIE PVT LTD

201, 51-53 Maroo Bhavan, Kalbadevi, Mumbai – 400002, India. Tel : + 91 22 2207 0099 / 6638 2599
Email : info@ottokemi.com, Web : www.ottokemi.com


----------ISO 9001: 2015----------

## MATERIAL SAFETY DATA SHEET

1.Identification
1.1GHS Product identifier
Gallium, 99.99%
Code G 1234

2.Hazard identification
2.1Classification of the substance or mixture
Skin corrosion, Category 1B
2.2GHS label elements, including precautionary statements
Pictogram(s)

| | |
|---|---|
| Signal word | Danger |
| Hazard statement(s) | H314 Causes severe skin burns and eye damage |
| Precautionary statement(s) | |
| Prevention | P260 Do not breathe dust/fume/gas/mist/vapours/spray.<br>P264 Wash ... thoroughly after handling.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.<br>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].<br>P363 Wash contaminated clothing before reuse.<br>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P310 Immediately call a POISON CENTER/doctor/\u2026<br>P321 Specific treatment (see ... on this label).<br>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Storage | P405 Store locked up. |
| Disposal | P501 Dispose of contents/container to ... |

2.3Other hazards which do not result in classification
none

3.Composition/information on ingredients
3.1Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|---|---|---|---|---|
| gallium atom | gallium atom | 7440-55-3 | none | 100% |

4.First-aid measures
4.1Description of necessary first-aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
4.2Most important symptoms/effects, acute and delayed
Excerpt from ERG Guide 172 [Gallium and Mercury]: Inhalation of vapors or contact with substance will result in contamination and potential harmful effects. Fire will produce irritating, corrosive and/or toxic gases. (ERG, 2016)

4.3Indication of immediate medical attention and special treatment needed, if necessary
/SRP:/ Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if needed. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary ... . Monitor for shock and treat if necessary ... . Anticipate seizures and treat if necessary ... . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport ... . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool ... . Cover skin burns with dry sterile dressings after decontamination ... . /Poison A and B/

5.Fire-fighting measures
5.1Extinguishing media
Suitable extinguishing media
If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. /Gallium metal, solid/
5.2Specific hazards arising from the chemical
Excerpt from ERG Guide 172 [Gallium and Mercury]: Non-combustible, substance itself does not burn but may react upon heating to produce corrosive and/or toxic fumes. Runoff may pollute waterways. (ERG, 2016)
5.3Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures
6.1Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
6.2Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3Methods and materials for containment and cleaning up
Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7.Handling and storage
7.1Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.
7.2Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

8.Exposure controls/personal protection
8.1Control parameters
Occupational Exposure limit values
no data available
Biological limit values
no data available
8.2Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
8.3Individual protection measures, such as personal protective equipment (PPE)
Eye/face protection
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Respiratory protection
Wear dust mask when handling large quantities.
Thermal hazards
no data available

9.Physical and chemical properties

| | |
|---|---|
| Physical state | light grey solid |
| Colour | Grayish metal, possesses a greenish-blue reflection or silver-like when molten; has a crystalline ortho-rhombic texture |
| Odour | no data available |
| Melting point/ freezing point | 29\u00baC |
| Boiling point or initial boiling point and boiling range | 2400\u00baC |
| 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 | 1.819 cP @ 32\u00b0C (dynamic) |
| Solubility | Sol in acid, alkali; slightly sol in mercury |
| Partition coefficient n-octanol/water (log value) | no data available |
| Vapour pressure | 1 Pa @ 1037\u00b0C; 10 Pa @ 1175\u00b0C; 100 Pa @ 1347\u00b0C... |
| Density and/or relative density | 5.9 |
| Relative vapour density | no data available |
| Particle characteristics | no data available |

10.Stability and reactivity
10.1Reactivity
no data available
10.2Chemical stability
Stable under recommended storage conditions.
10.3Possibility of hazardous reactions
Metals, such as GALLIUM METAL, are reducing agents and tend to react with oxidizing agents (i.e. hydrogen peroxide). Their reactivity is strongly influenced by their state of subdivision: in bulk they often resist chemical combination; in powdered form they may react more rapidly. Reacts violently with chlorine and other halogens at ambient temperatures [Bretherick, 5th Ed., 1995].
10.4Conditions to avoid
no data available
10.5Incompatible materials
Potentially explosive reaction with hydrogen peroxide + hydrochloric acid. Violent or vigorous reaction with halogens. Forms an amalgam with aluminum alloys.
10.6Hazardous decomposition products
If exposed to high temperatures, gallium metal may emit toxic fumes with may form a corrosive alkaline solution with water. /Gallium metal, solid/

11.Toxicological information
Acute toxicity
Oral: no data available
Inhalation: no data available
Dermal: no data available
Skin corrosion/irritation
no data available
Serious eye damage/irritation
no data available
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
no data available
Reproductive toxicity
no data available
STOT-single exposure
no data available
STOT-repeated exposure
no data available
Aspiration hazard
no data available

12.Ecological information
12.1Toxicity
Toxicity to fish: no data available
Toxicity to daphnia and other aquatic invertebrates: no data available
Toxicity to algae: no data available
Toxicity to microorganisms: no data available
12.2Persistence and degradability
no data available
12.3Bioaccumulative potential
no data available
12.4Mobility in soil
no data available
12.5Other adverse effects

no data available

13.Disposal considerations
13.1Disposal methods
Product
The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.
Contaminated packaging
Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14.Transport information
14.1UN Number
ADR/RID: UN3264 IMDG: UN3264 IATA: UN3264
14.2UN Proper Shipping Name
ADR/RID: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
IMDG: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
IATA: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
14.3Transport hazard class(es)
ADR/RID: 8 IMDG: 8 IATA: 8
14.4Packing group, if applicable
ADR/RID: III IMDG: III IATA: III
14.5Environmental hazards
ADR/RID: no IMDG: no IATA: no
14.6Special precautions for user
no data available
14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
no data available

15.Regulatory information
15.1Safety, health and environmental regulations specific for the product in question

| Chemical name | Common names and synonyms | CAS number | EC number |
|---|---|---|---|
| gallium atom | gallium atom | 7440-55-3 | none |
| European Inventory of Existing Commercial Chemical Substances (EINECS) | | | Listed. |
| EC Inventory | | | Listed. |
| United States Toxic Substances Control Act (TSCA) Inventory | | | Listed. |
| China Catalog of Hazardous chemicals 2015 | | | Listed. |
| New Zealand Inventory of Chemicals (NZIoC) | | | Listed. |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | | | Listed. |
| Vietnam National Chemical Inventory | | | Listed. |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) | | | Listed. |

**Section 16: Other Information**
This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.