

## Chemical Safety Data Sheet MSDS / SDS

## Gallium arsenide

Revision Date:2025-06-14 Revision Number:1

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

## Product identifier

Product name : Gallium arsenide  
CBnumber : CB7249244  
CAS : 1303-00-0  
EINECS Number : 215-114-8  
Synonyms : gallium arsenide,Lead(Pb)

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## Classification of the substance or mixture

Carcinogenicity, Category 1B  
Specific target organ toxicity – repeated exposure, Category 1  
Reproductive toxicity, Category 1B

## Label elements

## Pictogram(s)

Signal word : Danger

## Hazard statement(s)

H301 Toxic if swallowed  
H331 Toxic if inhaled  
H350 May cause cancer  
H372 Causes damage to organs through prolonged or repeated exposure  
H400 Very toxic to aquatic life  
H410 Very toxic to aquatic life with long lasting effects

#### Precautionary statement(s)

P201 Obtain special instructions before use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

#### Prevention

P203 Obtain, read and follow all safety instructions before use.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

#### Response

P318 IF exposed or concerned, get medical advice.

P319 Get medical help if you feel unwell.

#### Storage

P405 Store locked up.

#### Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

#### Other hazards

no data available

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## SECTION 3: Composition/information on ingredients

#### Substance

|              |                             |
|--------------|-----------------------------|
| Product name | : Gallium arsenide          |
| Synonyms     | : gallium arsenide,Lead(Pb) |
| CAS          | : 1303-00-0                 |
| EC number    | : 215-114-8                 |
| MF           | : AsGa                      |
| MW           | : 144.64                    |

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## SECTION 4: First aid measures

#### Description of first aid measures

##### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately.

Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

##### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

#### Most important symptoms and effects, both acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include diarrhea, hypotension, weakness, cardiac failure, convulsions, coma, nervousness, headache, dizziness hypothermia, abdominal cramps, irritability, paralysis, cardiac arrhythmia, respiratory edema, dyspnea, cyanosis, coughing, peripheral neuropathy, optic neuritis, anesthesia, paresthesia, alopecia, dermatitis, cirrhosis of the liver, salivation, aplastic anemia, kidney damage, anuria, liver damage, jaundice, hematuria, proteinuria and leukopenia. ACUTE/CHRONIC HAZARDS: When heated to decomposition, this compound emits very toxic fumes of arsenic. (NTP, 1992)

#### Indication of any immediate medical attention and special treatment needed

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

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## SECTION 5: Firefighting measures

#### Extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

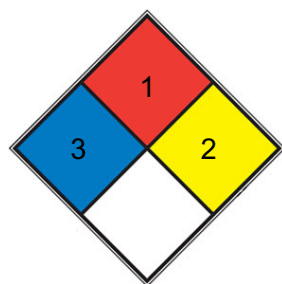
#### Specific Hazards Arising from the Chemical

Flash point data for this chemical are not available; however, it is probably combustible. (NTP, 1992)

#### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### NFPA 704



■ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

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Materials that require considerable preheating, under all ambient temperature conditions, before ignition and combustion

|                                     |       |   |   |
|-------------------------------------|-------|---|---|
| <input checked="" type="checkbox"/> | FIRE  | 1 | can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3 °C (200 °F). (e.g. <a href="#">mineral oil</a> , ammonia)                        |
| <input checked="" type="checkbox"/> | REACT | 2 | Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, <a href="#">potassium</a> , <a href="#">sodium</a> ) |
| <input type="checkbox"/>            | SPEC. |   |   |
| <input type="checkbox"/>            | HAZ.  |   |   |

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Arsenic is recovered as a hydrate of an as-group iii metal compound from soln or wastewater.

## SECTION 7: Handling and storage

### Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### Conditions for safe storage, including any incompatibilities

Protect container against physical damage. Store in well ventilated area away from food or food products and combustible materials. Inorganic arsenic compd

## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational Exposure limit values

| Component        | Gallium arsenide          |                   |                          |                   |
|------------------|---------------------------|-------------------|--------------------------|-------------------|
| CAS No.          | 1303-00-0                 |                   |                          |                   |
|                  | Limit value - Eight hours |                   | Limit value - Short term |                   |
|                  | ppm                       | mg/m <sup>3</sup> | ppm                      | mg/m <sup>3</sup> |
| Belgium          | ?                         | 0,0003            | ?                        | ?                 |
| Canada - Ontario | ?                         | 0,0003 (1)        | ?                        | ?                 |

|                  |   |            |   |              |
|------------------|---|------------|---|--------------|
| Finland          | ?   | 0,0003 (1) | ? | ?            |
| USA - NIOSH      | ?   | ?          | ? | 0,002 (1)(2) |
|                  | <b>Remarks</b>  |            |   |              |
| Canada - Ontario | (1) Respirable aerosol                                |            |   |              |
| Finland          | (1) Respirable fraction                               |            |   |              |
| USA - NIOSH      | (1) Calculated as As (2) Ceiling limit value (15 min) |            |   |              |

#### Biological limit values

no data available

#### Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

#### Individual protection measures

##### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

##### Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. 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

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

##### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties

#### Information on basic physicochemical properties

|  |  |
|--|--|
| Physical state   | pieces                                 |
| Colour   | Dark gray                              |
| Odour  | Garlic odor when moistened             |
| Melting point/freezing point                             | 1238°C                                 |
| 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                                      | no data available                      |
| Solubility   | less than 1 mg/mL at 68° F (NTP, 1992) |

|                                       |                   |
|---------------------------------------|-------------------|
| Partition coefficient n-octanol/water | no data available |
| Vapour pressure                       | no data available |
| Density and/or relative density       | 5.31              |
| Relative vapour density               | 5.31              |
| Particle characteristics              | no data available |

## SECTION 10: Stability and reactivity

### Reactivity

5 mg/cu m (as AS); NIOSH considers arsenic (inorganic cmpd, as As) to be a potential occupational carcinogen. Arsenic (inorganic cmpd, as As)

### Chemical stability

no data available

### Possibility of hazardous reactions

GALLIUM ARSENIDE can react with steam, acids and acid fumes. Reacts with bases with evolution of hydrogen. Attacked by cold concentrated hydrochloric acid. Readily attacked by the halogens. The molten form attacks quartz. (NTP, 1992)

### Conditions to avoid

no data available

### Incompatible materials

Can react with steam, acids, & acid fumes to evolve the deadly poisonous arsine. Molten gallium arsenide attacks quartz.

### Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /arsenic/.

## SECTION 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**

Classification of carcinogenicity: 1) evidence in humans: sufficient; 2) evidence in animals: limited. Overall summary evaluation of carcinogenic risk to humans is Group 1: Carcinogenic to humans. NOTE: This evaluation applies to the group of chemicals as a whole and not necessarily to all individual chemicals within the group. Arsenic and arsenic compounds

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

no data available

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

no data available

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## SECTION 12: Ecological information

### **Toxicity**

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

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **Other adverse effects**

no data available

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## SECTION 13: Disposal considerations

### **Disposal 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.

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## SECTION 14: Transport information

**UN Number**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

**UN Proper Shipping Name**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

**Transport hazard class(es)**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

**Packing group, if applicable**

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

**Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

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## SECTION 15: Regulatory information



## **Safety, health and environmental regulations specific for the product in question**

### **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)**

Not Listed.

### **PICCS**

Not Listed.

### **Vietnam National Chemical Inventory**

Not Listed.

### **IECSC**

Listed.

### **Korea Existing Chemicals List (KECL)**

Listed.

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## **SECTION 16: Other information**

### **Abbreviations and acronyms**

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### **References**

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Disclaimer:**

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