Chemical Safety Data Sheet MSDS / SDS

# Arsenic trichloride SDS

Revision Date:2024-04-25 Revision Number:1


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

### Product identifier

Product name: Arsenic trichloride

CAS: 7784-34-1

### 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.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

## SECTION 2: Hazards identification

### Classification of the substance or mixture

Acute toxicity - Category 3, Oral
Skin corrosion, Sub-category 1B

Acute toxicity - Category 3, Inhalation
Carcinogenicity, Category 1A
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

**GHS label elements, including precautionary statements**

Pictogram(s)

Signal word Danger

**Hazard statement(s)**

H301+H331 Toxic if swallowed or if inhaled
H314 Causes severe skin burns and eye damage
H350 May cause cancer
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects

**Precautionary statement(s)**

**Prevention**

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.
P273 Avoid release to the environment.

**Response**

P301+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316 Get emergency medical help immediately.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P318 IF exposed or concerned, get medical advice.
P391 Collect spillage.

**Storage**

P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

**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 which do not result in classification**

no data available

## SECTION 3: Composition/information on ingredients

**Substance**

| | |
|---|---|
| Chemical name: | Arsenic trichloride |
| Common names and synonyms: | Arsenic trichloride |
| CAS number: | 7784-34-1 |
| EC number: | 232-059-5 |
| Concentration: | 100% |

## SECTION 4: First aid measures

**Description of necessary first-aid measures**

**If inhaled**

Fresh air, rest. Half-upright position. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

### Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

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

It can cause death. In acute exposures, it is extremely toxic and caustic, owing not only to the poisonous nature of arsenic, but also to the release of hydrochloric acid in the presence of water. Exposure to the skin causes local irritation and blisters. Inhalation or ingestion causes hemorrhagic gastroenteritis resulting in loss of fluids and electrolytes, collapse, shock and death. Chronic poisoning can lead to peripheral nerve damage, skin conditions, liver damage and it has been implicated in the induction of skin and lung cancer. The fatal human dose is 70-180 mg depending on the weight of the victim. (EPA, 1998)

### Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. 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 . 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 . Chlorine and related compounds

## SECTION 5: Firefighting measures

### 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.) Do not use water on material itself. If large quantities of combustibles are involved, use water in flooding quantities as spray and fog. Use water spray to knock down vapors.

### Specific hazards arising from the chemical

When in contact with active metals such as arsenic, iron, aluminum, zinc, or when heated to decomposition, it emits highly toxic fumes of arsenic. Upon contact with water hydrogen chloride is produced. Water causes it to decompose to yield arsenic acid and hydrochloric acid. Avoid active metals such as arsenic, iron, aluminum, zinc, decomposed by water to form arsenic hydroxide and hydrogen chloride. Avoid air, ultraviolet light. Hazardous polymerization may not occur. (EPA, 1998)

### Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable plastic containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations.

### Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable plastic containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations.

### Methods and materials for containment and cleaning up

Environmental consideration: Air spill: Apply water spray or mist to knock down vapors. Vapor knockdown water is corrosive or toxic and should be diked for containment.

## SECTION 7: Handling and storage

### Precautions for safe handling

NO contact with water or metals. 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

Separated from food and feedstuffs. Cool. Dry. Ventilation along the floor.Separate from acids, alkalies. Store in a cool, dark, dry, well-ventilated location.

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

TLV: 0.01 mg/m3, as TWA; A1 (confirmed human carcinogen); BEI issued.MAK: skin absorption (H); carcinogen category: 1; germ cell mutagen group: 3A

### Biological limit values

no data available

### Appropriate engineering 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, such as personal protective equipment (PPE)

### Eye/face protection

Wear safety spectacles, face shield or eye protection in combination with breathing protection.

### Skin protection

Protective gloves. Protective clothing.

### Respiratory protection

Use closed system or ventilation.

### Thermal hazards

no data available

## SECTION 9: Physical and chemical properties and safety characteristics

| | |
|---|---|
| Physical state: | Arsenic trichloride is a colorless to yellow oily fuming liquid. It is irritating to the skin, eyes, and mucous membranes. Very toxic by inhalation and ingestion. |
| Colour: | Oily liquid |
| Odour: | Acrid |

| | |
|---|---|
| Melting point/freezing point: | -16°C(lit.) |
| Boiling point or initial boiling point and boiling range: | 130.2°C(lit.) |
| Flammability: | Not combustible. Gives off irritating or toxic fumes (or gases) in a fire. |
| Lower and upper explosion limit/flammability limit: | no data available |
| Flash point: | 130.2°C |
| Auto-ignition temperature: | no data available |
| Decomposition temperature: | no data available |
| pH: | no data available |
| Kinematic viscosity: | no data available |
| Solubility: | One mol can be dissolved in 9 moles of water; miscible with chloroform, carbon tetrachloride, iodine, sulfur, alkali iodides, oils and fats. |
| Partition coefficient n-octanol/water: | no data available |
| Vapour pressure: | 10 mm Hg at 74.3° F (EPA, 1998) |
| Density and/or relative density: | 2.163 |
| Relative vapour density: | 6.25 (EPA, 1998) (Relative to Air) |
| 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)
Decomposes on heating. This produces toxic fumes of hydrogen chloride (see ICSC 0163) and arsenic oxides. Reacts violently with water and moist air. This produces hydrogen chloride (see ICSC 0163). Attacks many metals. This produces flammable/explosive gas (hydrogen - see ICSC 0001).

### Chemical stability

Fumes in moist air

### Possibility of hazardous reactions

When ARSENIC CHLORIDE is heated to decomposition or on contact with mineral acids, it emits highly toxic fumes of hydrogen chloride and of metallic arsenic. Explodes with Na, K, and Al on impact [Sax, 9th ed., 1996, p. 275]. The interaction of hexafluoroisopropylideneaminolithium with a range of chlorinated and /or fluorinated derivatives of arsenic, boron, phosphorus, silicon, and sulfur yielded a violently exothermic reaction.

### Conditions to avoid

no data available

### Incompatible materials

With aluminum: Powdered aluminum ignites in the vapor of arsenic trichloride.

### Hazardous decomposition products

Decomposes with sunlight or on contact with water or moist air to produce hydrogen chloride and arsenic trioxide.

## 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

The substance is severely irritating to the eyes, skin and respiratory tract. The substance may cause effects on the gastrointestinal tract, cardiovascular system and central nervous system. This may result in severe gastroenteritis, loss of fluids and electrolytes, cardiac disorders, shock and convulsions. Exposure above the OEL could cause death. The effects may be delayed. Medical observation is indicated.

### STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the mucous membranes, skin, peripheral nervous system, liver and bone marrow. This may result in pigmentation disorders, hyperkeratosis, perforation of the nasal septum, neuropathy, liver impairment and anaemia. This substance is carcinogenic to humans. Animal tests show that this

substance possibly causes malformations in human babies.

**Aspiration hazard**

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

## 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

## 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.

## SECTION 14: Transport information

### UN Number

ADR/RID: UN1560 (For reference only, please check.)
IMDG: UN1560 (For reference only, please check.)
IATA: UN1560 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: ARSENIC TRICHLORIDE (For reference only, please check.)
IMDG: ARSENIC TRICHLORIDE (For reference only, please check.)
IATA: ARSENIC TRICHLORIDE (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

### Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

**Special precautions for user**

no data available

**Transport in bulk according to IMO instruments**

no data available

## 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)**

Listed.

**(PICCS)**

Listed.

**Vietnam National Chemical Inventory**

Listed.

**IECSC)**

Not Listed.

**Korea Existing Chemicals List (KECL)**

Listed.

## 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?pageID=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/

## Other Information

The apparent melting point caused by loss of crystal water is given. Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.