

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: ARSENIC TRICHLORIDE
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1. Chemical Product and Company Identification

**BOC Gases,
Division of
The BOC Group, Inc.
575 Mountain Avenue
Murray Hill, NJ 07974**

**BOC Gases
Division of
BOC Canada Limited
5975 Falbourne Street, Unit 2
Mississauga, Ontario L5R 3W6**

TELEPHONE NUMBER: (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

TELEPHONE NUMBER: (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802
EMERGENCY RESPONSE PLAN NO: 20101

PRODUCT NAME: ARSENIC TRICHLORIDE
CHEMICAL NAME: Arsenic Trichloride
COMMON NAMES/SYNONYMS: Arsenic(III) Chloride
TDG (Canada) CLASSIFICATION: 6.1 (9.2)
WHMIS CLASSIFICATION: D1A, D2A, D2B, E

PREPARED BY: Loss Control (908)464-8100/(905)501-1700
PREPARATION DATE: 6/1/95
REVIEW DATES: 6/7/96

2. Composition, Information on Ingredients

INGREDIENT	% VOLUME	PEL-OSHA ¹	TLV-ACGIH ²	LD ₅₀ or LC ₅₀ Route/Species
Arsenic Trichloride FORMULA: AsCl ₃ CAS: 7784-34-1 RTECS #: CG1750000	100	0.01 mg/m ³ TWA as As	0.01 mg/m ³ TWA, A1 as As	Not Available

¹ As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

² As stated in the ACGIH 1994-95 Threshold Limit Values for Chemical Substances and Physical Agents

3. Hazards Identification**EMERGENCY OVERVIEW**

Severely irritating and corrosive to the eyes, mucous membranes and skin. Inhalation may cause digestive system disorders and liver toxicity. Certain arsenic compounds are recognized cancer-causing agents. Forms hydrochloric acid on contact with moisture. Nonflammable.

ROUTE OF ENTRY:

Skin Contact Yes	Skin Absorption No	Eye Contact Yes	Inhalation Yes	Ingestion Yes
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PRODUCT NAME: ARSENIC TRICHLORIDE

HEALTH EFFECTS:

Exposure Limits No	Irritant Yes	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen Yes
Synergistic Effects None Reported		

Carcinogenicity: -- NTP: Yes IARC: Yes OSHA: Yes

EYE EFFECTS:

Contact with the eyes causes severe irritation and can cause corrosive burns.

SKIN EFFECTS:

Contact with skin causes severe irritation and can cause corrosive burns. Certain inorganic arsenic compounds have been associated with a carcinogenic response to skin in animals and humans.

INGESTION EFFECTS:

Ingestion causes weakness and irritation of the mouth and stomach. An overdose can cause arsenic poisoning, although symptoms may be delayed.

INHALATION EFFECTS:

Inhalation causes irritation of the nose and throat. Symptoms include irritation, redness, and pain. Arsenic poisoning may occur from excessive exposure. There is sufficient evidence that certain inorganic arsenic compounds are carcinogenic, although arsenic trichloride, as such has not been shown to be a carcinogen.

NFPA HAZARD CODES

Health: 3
Flammability: 0
Reactivity: 0

HMS HAZARD CODES

Health: 3
Flammability: 0
Reactivity: 0

RATINGS SYSTEM

0 = No Hazard
1 = Slight Hazard
2 = Moderate Hazard
3 = Serious Hazard
4 = Severe Hazard

4. First Aid Measures

EYES:

PERSONS WITH POTENTIAL EXPOSURE TO ARSENIC TRICHLORIDE SHOULD NOT WEAR CONTACT LENSES. Flush contaminated eye(s) with copious quantities of water. Part eyelids to assure complete flushing. Continue for a minimum of 30 minutes. Seek medical attention.

SKIN:

Remove contaminated clothing as rapidly as possible. Flush affected skin with plenty of water and mild soap. Seek immediate medical attention.

INGESTION:

If conscious, have victim drink water or milk. If unconscious or having convulsions, keep victim warm and seek immediate medical attention.

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INHALATION:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO ARSENIC TRICHLORIDE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF CONTAINED BREATHING APPARATUS. Regard anyone exposed to arsenic trichloride as having a potentially toxic dose. Move the victim to an uncontaminated atmosphere. Keep the victim warm, quiet and at rest. Provide assisted respiration if breathing has stopped. Administer oxygen if breathing is labored and when assisted respiration is given. Medical attention is imperative. Advise physician of the possible cause of the problem and that he must promptly inform himself (if not familiar with arsenic poisoning) of the toxic properties of this powerful hemolytic agent.

5. Fire Fighting Measures

Conditions of Flammability: Nonflammable		
Flash point: None	Method: Not Applicable	Autoignition Temperature: None
LEL(%): None	UEL(%): None	
Hazardous combustion products: None		
Sensitivity to mechanical shock: None		
Sensitivity to static discharge: None		

FIRE AND EXPLOSION HAZARDS:

None.

EXTINGUISHING MEDIA:

Do not use water on adjacent fires, which will form irritating and toxic vapors of hydrogen chloride. Use CO2 or dry chemical or other inert gas.

FIRE FIGHTING INSTRUCTIONS:

Wear self contained breathing apparatus and full protective gear. Special personnel decontamination procedures are required. Consult HAZMAT specialist.

6. Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve, contact the appropriate emergency telephone number listed in Section 1 or call your closest BOC location. Collect and place in a sealed, labeled container for disposal.

7. Handling and Storage

Protect container from physical damage. Store in a dry, well ventilated area away from combustible material.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8. Exposure Controls, Personal Protection

EXPOSURE LIMITS¹:

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Arsenic Trichloride FORMULA: AsCl ₃ CAS: 7784-34-1 RTECS #: CG1750000	100	0.01 mg/m ³ TWA as As	0.01 mg/m ³ TWA, A1 as As	Not Available

¹ Refer to individual state of provincial regulations, as applicable, for limits which may be more stringent than those listed here.

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993)

³ As stated in the ACGIH 1994-1995 Threshold Limit Values for Chemical Substances and Physical Agents.

ENGINEERING CONTROLS:

Use local exhaust ventilation to reduce concentrations to within current exposure limits. A laboratory type hood is suitable for handling small or limited quantities.

EYE/FACE PROTECTION:

Safety goggles or glasses, plus a face shield.

SKIN PROTECTION:

Rubber protective gloves. Consult manufacturers data for applicability.

RESPIRATORY PROTECTION:

An airline respirator with full-face mask and escape bottle or a self contained breathing apparatus should be available for emergency use. Operate this equipment in the positive pressure demand mode, PPD!

OTHER/GENERAL PROTECTION:

Protective clothing to prevent contact.

9. Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Liquid	
Vapor pressure at 23.5 °C	: 10	mmHg
Vapor density (Air = 1)	: Not Available	
Evaporation point	: Not Available	
Boiling point	: 86.4	°F
	: 30.2	°C
Freezing point	: 16.7	°F
	: -8.5	°C
pH	: Not Available	
Specific gravity (Water = 1.0)	: 2.163	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Decomposes	
Odor threshold	: Not Available	
Odor and appearance	: A colorless, oily liquid with an unpleasant odor.	

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10. Stability and Reactivity

STABILITY:

Unstable when heated.

INCOMPATIBLE MATERIALS:

Water.

HAZARDOUS DECOMPOSITION PRODUCTS:

Hydrogen chloride.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. Toxicological Information

MUTAGENIC:

A number of laboratory studies have reported mutagenic effects from this chemical.

TUMORIGENIC:

“Arsenic and Certain Arsenic Compounds” are listed on the National Toxicology Program Fourth Annual Report on Carcinogens and IARC Group 1A Carcinogens list, although arsenic trichloride is not specifically listed as a carcinogen.

OTHER:

Chronic exposure to arsenic compounds commonly results in skin abnormalities including itching, pigmentation changes and sometimes cancerous lesions. Disturbances of the blood, kidneys and nervous system may also result.

12. Ecological Information

No data given.

13. Disposal Considerations

Dispose of in accordance with federal, state, and local regulations.

14. Transport Information

PARAMETER	United States DOT	Canada TDG
PROPER SHIPPING NAME:	Arsenic Trichloride	Arsenic Trichloride
HAZARD CLASS:	6.1	6.1 (9.2)
IDENTIFICATION NUMBER:	UN 1560	UN 1560
SHIPPING LABEL:	POISON	POISON

Additional Marking Requirement: “Inhalation Hazard”

If net weight of product \geq 1 pound, the container must be also marked with the letters “RQ”.

Additional Shipping Paper Description Requirement: “Poison Inhalation Hazard, Zone B”

If net weight of product \geq 1 pound, the shipping papers must be also marked with the letters “RQ”.

Packing Group: I

MSDS: G-122

Revised: 6/7/96

15. Regulatory Information

Arsenic trichloride is listed under the accident prevention provisions of the Clean Air Act (CAA) with a threshold quantity (TQ) of 15,000 pounds.

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES:

Acute Health Hazard
Chronic Health Hazard
Sudden Release of Pressure Hazard

Arsenic trichloride is listed as an extremely hazardous substance (EHS) subject to state and local reporting under Section 304 of SARA Title III (EPCRA) with a reportable quantity (RQ) of 1 pound.

The presence of arsenic trichloride in quantities in excess of the threshold planning quantity (TPQ) of 500 pounds requires certain emergency planning activities to be conducted.

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS NUMBER	INGREDIENT NAME	PERCENT BY VOLUME
7784-34-1	ARSENIC TRICHLORIDE	100

This information must be included on all MSDSs that are copied and distributed for this material.
This product is listed on the Toxic Substances Control Act (TSCA) inventory.

16. Other Information

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).