

# MATERIAL SAFETY DATA SHEET



Cardinal Professional Products  
P.O. Box 782  
Hollister, CA 95024

## 1. CHEMICAL PRODUCTS AND COMPANY INFORMATION

**PRODUCT NAME:** CHLOROPICRIN WARNING AGENT  
**PRODUCT CODE:** NOT CONSIDERED A PESTICIDE BY EPA  
**SYNONYMS:** CHLOROPICRIN, 'PIC"  
**MANUFACTURER:** CARDINAL PROFESSIONAL PRODUCTS  
**TELEPHONE M-F, 8:00-4:30 PDT** (800) 548-2223  
**MSDS & Product Information, 8:00-4:30 PDT:** (800) 548-2223, (831) 637-0195X3024

<b>24 HOUR EMERGENCY PHONE (INFOTRAC) U.S. and CANADA:</b>	(800)-535-5053	<b>INFOTRAC (ALL OTHER AREAS):</b>	(800) 535-5053
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## 2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS #	% by wt	EXPOSURE LIMITS
Chloropicrin	000076-06-2	99.0 min.	Y (Hazardous) 0.1 ppm (OSHA PEL TWA) 0.1 ppm (ACGIH TLV TWA) 0.1 ppm (NIOSH REL) 4 ppm (OSHA IDHL)
PEL = Permissible Exposure Limits. TLV = Threshold Limit Value.		TWA = Time Weighted Average (8 hr). STEL = Short Term Exposure Limit (15 min.).	

## 3. HAZARDS IDENTIFICATION

### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**GENERAL INFORMATION:** READ THE LABEL COMPLETELY BEFORE USING THIS PRODUCT  
DANGER – POISON - HIGHLY TOXIC  
Highly toxic liquid and vapor. Noxious odor, may act as own warning agent against overexposure. Exposure to hazardous levels of chloropicrin cannot be voluntarily tolerated. May be fatal if inhaled. Severe damage follows liquid contact with eyes or skin. Airborne exposure to concentrations of 0.1 – 0.3 ppm may cause

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immediate tearing and irritation of the eyes and irritation of the respiratory tract or contaminated body surfaces. Classified as corrosive to skin according to DOT Guidelines. Toxic to fish and aquatic organisms.

## 4. EMERGENCY AND FIRST AID MEASURES

### FIRST AID PROCEDURES:

**IN ALL CASES OF OVEREXPOSURE, GET MEDICAL ATTENTION IMMEDIATELY, TAKE PERSON TO A DOCTOR OR TO AN EMERGENCY TREATMENT FACILITY.**

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### Signs and Symptoms of Chloropicrin

**Overexposure** Exposure to vapor causes tearing and eye, nose, and throat irritation. Excessive overexposure may result in coughing, nausea, vomiting, breathing difficulties, or death. Liquid can cause severe burns to eyes and skin. ACUTE – Overexposure can be fatal. Irritation of respiratory tract causes congestion, hemorrhaging, severe bronchitis, and edema.

**IF INHALED:** Get exposed person to fresh air. Keep warm. Make sure person can breathe freely. If breathing has stopped, give artificial respiration. Give oxygen if needed. Do not give anything by mouth to an unconscious person. Seek medical attention.

**IF INGESTED** Harmful if swallowed. Seek medical attention. Ingestion may cause severe gastrointestinal damage and may include nausea, vomiting and abdominal pain, collapse and death.

### NOTE TO PHYSICIAN:

Chloropicrin is a volatile liquid that is the active ingredient in tear gas. As a gas it is a powerful lachrymator. Early symptoms of overexposure are lachrymation, respiratory distress, and vomiting. Pulmonary edema may develop later. Treatment is symptomatic.

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## 5. FIRE FIGHTING MEASURES

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### FLAMMABLE PROPERTIES

**FLAMMABILITY CLASSIFICATION:** Not combustible

**FLASH POINT:** None

**FLAMMABLE LIMITS IN AIR (% by volume):** There is no danger of fire or explosion in use concentrations.

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

**AUTOIGNITION TEMPERATURE:** Not applicable

**SENSITIVE STATIC DISCHARGE:** Not applicable

**HAZARDOUS COMBUSTION PRODUCTS:** Not combustible. Heated material decomposes violently at 233°F (112°C) especially when in contact with metals. Chloropicrin decomposes into hydrogen chloride and/or chlorine, phosgene, and oxides of nitrogen.

**EXTINGUISHING MEDIA:** All conventional media are suitable.  
**FIRE FIGHTING INSTRUCTIONS:** Wear self-contained breathing apparatus and protective clothing to protect from skin and eye contact in fire situations. Work from safe, protected position. Cool cylinders with water fog. Cylinders may rupture violently and release toxic gas due to over pressure.

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## 6. ACCIDENTAL RELEASE MEASURES:

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**STEPS TO BE TAKEN IN CASE MATERIAL IS LEAKED OR SPILLED** Evacuate the immediate area of the spill or leak. Use SCBA or combination air-supplied respirator for entry into the affected area to correct problem. Move leaking or damaged cylinders or containers outdoors or to an isolated location, observing strict safety precautions. Work up wind if possible. Allow spill to evaporate. Do not permit entry into spill area by unprotected persons until the concentration of chloropicrin is determined to be less than 0.1 ppm.

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## PERSONAL PRECAUTIONS

See Section 8

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## 7. HANDLING AND STORAGE

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### GENERAL PROCEDURES: OBSERVE THE FOLLOWING PRECAUTIONS HANDLING:

1. Avoid any possible contact with liquid or vapor.
2. Do not discharge contents outside of areas confined for treatment.
3. Comply with all local regulations and ordinances.

**STORAGE AND DISPOSAL:** Store in a secure manner either outdoors under ambient conditions or indoors in a well-ventilated area. Post as a pesticide storage area. Do not contaminate water, food or feed by storage. Store cylinders upright, secured to a rack or wall to prevent tipping. Cylinders should not be subjected to rough handling or mechanical shock, such as dropping, bumping, dragging, or sliding. Do not use rope slings, hooks, tongs or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured. Replace plug tightly when cylinder is not in use and when cylinder is empty, before returning to shipper. Only the registrant is authorized to refill cylinders. Do not use cylinders for any other purpose.

**RETURN CYLINDERS TO:** Cardinal Professional Products  
8770 Highway 25  
Hollister, CA 95023  
or  
Cardinal c/o Niklor Chemical Company  
1667 Purdy Avenue  
Mojave, CA 93501

Or your distributor/supplier

Cylinders are the property of Cardinal Professional Products and should be returned promptly. Do not ship cylinders without plug tightly in place. When a cylinder is partially full and there is no further requirement for the product, contact the company for return instructions.

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## WORK HYGIENIC PRACTICES:

1. All persons working with chloropicrin should be trained in the hazards, use of required respirator equipment, emergency procedures and in the proper use of chloropicrin warning agent.
2. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMITS:

#### Air Concentration Level

The acceptable air concentration level for persons exposed to chloropicrin is 0.1 ppm. The air concentration level is measured by a direct reading detection device, such as a Kitagawa detection device using tube 172.

### ENGINEERING CONTROLS:

Sufficient to reduce concentration to TLV.  
Local Exhaust: From point of origin of fumes.  
General: Provide exhaust from inside of building.

### RESPIRATORY PROTECTION:

A respirator is required if the air concentration level of 0.1 ppm for chloropicrin is exceeded at any time. The respirator must be one of the following types: (a) a supplied-air respirator (MSHA/NIOSH approval number prefix TC-19C) or (b) a self-contained breathing apparatus (SCBA (MSHA/NIOSH approval number prefix TC-13F).

### SKIN PROTECTION:

#### Applicators and other handlers must wear:

1. Loose-fitting or well ventilated clothing,
2. Do not wear jewelry, gloves, tight clothing, rubber protective clothing, or rubber boots when handling. Chloropicrin is heavier than air and can be trapped inside clothing and cause skin injury.
3. If liquid fumigant splashes or spills on clothing, shoes or socks remove them at once, as they will be an intolerable source of irritation. Keep clothing and shoes outdoors and do not reuse them until thoroughly aerated
4. Heavily drenched clothing, shoes or socks and any absorbent materials should be discarded. Do not reuse them.
5. Follow the PPE manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water.

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Keep and wash PPE and work clothing separately from other laundry.

6. Follow PPE manufacturer's instructions for cleaning/maintaining protective eyewear and respirators.

## EYE PROTECTION:

Full-face shield when handling liquid product or safety glasses with brow and temple shields. (Do NOT wear goggles.)

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**MOLECULAR FORMULA:** CCl<sub>3</sub>NO<sub>2</sub>  
**MOLECULAR WEIGHT:** 164.39  
**WEIGHT PER GALLON:** 13.76 lbs  
**APPEARANCE:** Clear, colorless liquid  
**ODOR:** Intensely irritating tear gas odor  
**PHYSICAL STATE:** Liquid below 112°C  
**VAPOR PRESSURE:** 18.3 @ 68°F  
**VAPOR DENSITY:** 5.676 (Air=1)  
**BOILING POINT:** 233 F (112°C)  
**SOLUBILITY IN WATER:** 0.227g/100ml @ 0°C  
**SPECIFIC GRAVITY:** liquid 1.651 @ 20°C

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## 10. STABILITY AND REACTIVITY

### CHEMICAL STABILITY:

Stable under normal conditions of handling and use  
Unstable under fire conditions. Avoid temperatures above 140°F (60°C).

### INCOMPATIBILITY:

(Specific materials to avoid)

- Organic amines
- Reducing agents and sulfuric acid
- Incompatible with containers or equipment made of aluminum, magnesium or their alloys.

### HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition may produce highly toxic phosgene, and toxic nitrogen oxide.

### HAZARDOUS POLYMERIZATION:

Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

<b>CANCER INFORMATION:</b>	Available data are inadequate to evaluate carcinogenicity.
<b>TERATOLOGY (BIRTH DEFECTS)</b>	Did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.
<b>REPRODUCTIVE EFFECTS:</b>	Did not interfere with reproduction in laboratory animal studies.
<b>MUTAGENICITY:</b>	Has been shown to have mutagenic activity in bacteria. Animal genetic toxicity studies were inconclusive.

## 12. ECOLOGICAL INFORMATION:

<b>ECOTOXICOLOGICAL INFORMATION</b>	Highly toxic to fish on an acute basis.
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## 13. DISPOSAL:

<b>DISPOSAL CONSIDERATIONS</b>	Pesticide wastes are toxic. Improper disposal of excess pesticide is a violation of Federal law. Unused fumigant should be returned as in section 7. If there are any questions regarding disposal, contact Cardinal.
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## 14. TRANSPORT INFORMATION:

### U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION

<b>PROPER SHIPPING NAME:</b>	CHLOROPICRIN POISON-INHALATION HAZARD, HAZARD ZONE B, ERG #154
<b>HAZARD CLASS:</b>	6.1
<b>IDENTIFICATION NUMBER (UN or NA):</b>	UN 1580
<b>PACKING GROUP:</b>	I
<b>FOR BULK PACKAGES AND ALL SHIPMENTS BY VESSEL:</b>	CHLOROPICRIN/6.1/UN1580/PG I/MARINE POLLUTANT/POISON INHALATION HAZARD//ZONE B

<b>OTHER SHIPPING INFORMATION</b>	Placard: Inhalation Hazard -2 (when required)
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## 15. REGULATORY INFORMATION:

### U.S. FEDERAL REGULATIONS:

#### TOXIC SUBSTANCES CONTROL ACT (TSCA):

Ingredients are on the TSCA inventory or are not required to be listed on the TSCA Inventory.

#### SARA HAZARDS:

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard  
A delayed health hazard

<b>IMMEDIATE (ACUTE HEALTH HAZARD)</b>	<b>YES</b>	<b>FIRE HAZARD</b>	<b>NO</b>
<b>CHRONIC OR DELAYED HEALTH HAZARD</b>	<b>YES</b>	<b>REACTIVE HAZARD</b>	<b>YES</b>
		<b>SUDDEN PRESSURE GENERATING HAZARD</b>	<b>NO</b>

#### OSHA HIGHLY HAZARDOUS CHEMICALS

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### STATE REGULATIONS

Chloropicrin:

- California Regulations: VOC: (not available)
- NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%). NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
- Massachusetts Substance List
- Pennsylvania Hazardous Substance List (1% reporting limit)



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This material (or each component) is listed on the following inventories:

Canada – DSL

EU – EINECS

Australia – AICS

Canadian Disclosure List (0.1%) Chloropicrin

Canadian WHMIS Hazard Class and Division = D.1.a, E, F

**The above regulatory information represents only selected regulations and is not meant to be a complete list.**

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## 16. OTHER INFORMATION

### HMIS RATINGS:

We assign HMIS ratings to this product based on the hazards of its ingredients(s). Since the customer is most aware of the applications and conditions of use, he must ensure that the proper personal protective equipment is provided consistent with information contained in Section's 7 and 8 of this MSDS.

<b>HMIS RATINGS:</b>	Health	4
	Flammability	0
	Reactivity	3

*The data contained herein is based on information currently available to Cardinal Professional Products, and believed to be factual and the opinions expressed to be those of qualified experts; however, this data is not to be taken as a warranty or representation for which Cardinal Professional Products assumes legal responsibility.*

Material Safety Data Sheet prepared by Cardinal Regulatory Affairs Group