

Safety Data Sheet

Issue Date: 17-Jul-2019

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Version 1

1. IDENTIFICATION

Product identifier

Product Name Chloropicrin Warning Agent

Other means of identification

SDS # DOUG-008
Document ID # SDS.Chloropicrin Warning Agent.English.20190718.1
Synonyms Nitrotrichloromethane, Trichloronitromethane, Nitrochloroform.
UN/ID No UN1580

Recommended use of the chemical and restrictions on use

Recommended Use Fumigation Warning Agent.

Details of the supplier of the safety data sheet

Supplier Address

Douglas Products and Packaging Company, LLC
 1550 East Old 210 Highway
 Liberty, MO 64068
 Customer Information Number: 800-223-3684

Emergency telephone number

Emergency Telephone 1-844-845-3129 or 1-352-326-7641

2. HAZARDS IDENTIFICATION

Appearance slightly oily, clear to light green/brown liquid **Physical state** Liquid **Odor** Tear gas odor (odor is intensely irritating)

Classification

Acute toxicity - Oral	Category 3
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Signal Word

Danger

Hazard statements

Toxic if swallowed
 Fatal if inhaled
 Causes skin irritation
 Causes serious eye irritation
 May cause respiratory irritation



Precautionary Statements - Prevention

Wear protective gloves/protective clothing/eye protection/face protection
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear respiratory protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 IF ON SKIN: Wash with plenty of water and soap
 Immediately call a POISON CENTER or doctor
 Take off immediately all contaminated clothing and wash it before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Very toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Nitrotrichloromethane, Trichloronitromethane, Nitrochloroform.

Chemical name	CAS No	Weight-%
Chloropicrin	76-06-2	>99.5

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice	Provide this SDS to medical personnel for treatment. Any additional important symptoms and effects are described in Section 11: Toxicology Information.
Eye Contact	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available. Obtain medical attention promptly, preferably from an ophthalmologist.
Skin Contact	Liquid: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Get medical attention immediately. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Gas: Skin absorption is unlikely due to physical properties.

Inhalation	Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc.). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
Ingestion	Call a physician and/or transport to emergency facility immediately. Do not induce vomiting unless told to do so by the poison control or doctor. Never give anything by mouth to an unconscious person.
Self-Protection of the First Aider	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause lung, liver and kidney damage. May cause allergic respiratory and skin reaction and could be fatal if inhaled. Causes eye, skin and respiratory tract irritation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Chloropicrin can cause irritation of the mucous membrane and upper respiratory tract. Inhalation may cause anemia, weak and irregular heart, recurrent asthmatic attacks, bronchitis, pulmonary edema, and possible death. Gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion may cause colic and death. Treat appropriately. Ensure medical personal are aware of the materials involved.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water. Dry chemical. Carbon dioxide (CO₂).

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Container may rupture from gas generation in a fire situation.

Hazardous combustion products Smoke, fumes or vapors, and oxides of carbon.

Protective equipment and precautions for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Contain fire water run-off if possible. Fire water runoff, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Isolate area. Stay upwind and out of low areas. Ventilate area of leak or spill. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up **Small spills:** Absorb with materials such as: Clay, Dirt or Sand. Sweep up. Collect in suitable and properly labeled containers.
Large spills: Contact Douglas Products for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Wear appropriate personal protective equipment. Wash face, hands and any exposed skin thoroughly after handling. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Store containers upright. Protect from direct sunlight. Keep/store only in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

Incompatible Materials Amines, aniline, sodium methoxide, particularly at elevated temperatures. Do not use with PVC, aluminum, magnesium or their alloys. Mixing with water may cause formation of corrosive products over time. Contact with oxidizing and reducing agents, strong acids or bases may cause fires or explosions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chloropicrin 76-06-2	TWA: 0.1 ppm	TWA: 0.1 ppm TWA: 0.7 mg/m ³ (vacated) TWA: 0.1 ppm (vacated) TWA: 0.7 mg/m ³	IDLH: 2 ppm TWA: 0.1 ppm TWA: 0.7 mg/m ³

Other Information RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. **APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.**

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits. Showers. Eyewash stations. Use explosion-proof ventilation equipment. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Chemical safety goggles/face-shield. Refer to 29 CFR 1910.133 for eye and face protection regulations.
Skin and Body Protection	Wear clean, body-covering clothing. Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Consistent with general hygienic practice for any material, skin contact should be minimized. Refer to 29 CFR 1910.138 for appropriate skin and body protection.
Respiratory Protection	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air purifying respirators: Organic vapor cartridge with a particulate pre-filter. Approved self-contained breathing apparatus with full face piece may be appropriate for certain operations. Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	slightly oily, clear to light green/brown liquid	Odor	Tear gas odor (odor is intensely irritating)
Color	Clear to light green/brown	Odor Threshold	Not determined
Property	Values	Remarks • Method	
pH	non-aqueous		
Melting point / freezing point	-64°C		
Boiling point / boiling range	112°C		
Flash point	Not determined		
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	Not determined		
Flammability Limit in Air			
Upper flammability or explosive limits	Not determined		
Lower flammability or explosive limits	Not determined		
Vapor Pressure	23.9 mm Hg		
Vapor Density	5.7	(Air=1)	
Relative Density	1.657		
Water Solubility	1.6 g/L 25°C, Unbuffered		
Solubility in other solvents	Not determined		
Partition Coefficient	2.1		
Autoignition temperature	Not determined		
Decomposition temperature	Not determined		
Kinematic viscosity	Not determined		
Dynamic Viscosity	Not determined		
Explosive Properties	Not determined		
Oxidizing Properties	Not determined		

Other information

NOTE: The physical data presented above are typical values and should not be construed as a specification

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Incompatible Materials. Excessive heat.

Incompatible materials

Amines, aniline, sodium methoxide, particularly at elevated temperatures. Do not use with PVC, aluminum, magnesium or their alloys. Mixing with water may cause formation of corrosive products over time. Contact with oxidizing and reducing agents, strong acids or bases may cause fires or explosions.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: hydrogen chloride, phosgene, carbon monoxide, oxides of nitrogen, irritating and toxic fumes and gases, carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact	Causes serious eye irritation. Corneal injury is unlikely. Powerful lachrymator, commonly referred to as tear gas.
Skin Contact	Skin absorption is unlikely due to physical properties. Prolonged skin contact is unlikely to result in absorption of harmful amounts. As a product the Dermal LD50 has not been determined.
Inhalation	Pungent, sore throat, coughing, labored breathing, dizziness, nausea, vomiting, bluish skin, faintness. Serious cases may be fatal. As a product the Inhalation LC50 has not been determined.
Ingestion	May cause severe burns of the mouth and throat. Ingestion may cause gastrointestinal irritation or ulceration. In animals, effects have been reported on the following organ: liver. As a product the Oral LD50 has not been determined.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Causes redness and chemical burns. Liquid chloropicrin has a corrosive action on the skin. Scratches or abrasions exposed to chloropicrin fumes invariably become septic.
Germ cell mutagenicity	Has been shown to have mutagenic activity in bacteria. Animal mutagenicity studies were inconclusive.
Carcinogenicity	Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
STOT - single exposure	May cause drowsiness or dizziness.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life. This material is toxic to mammals, birds, and aquatic invertebrates.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Chloropicrin 76-06-2		0.092 - 0.119: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 0.0142 - 0.019: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	

Persistence/Degradability

The half-life of chloropicrin in sandy loam soil was 8-24 hours and 4.5 days with carbon dioxide being the terminal breakdown product.

Bioaccumulation

The octanol/water partition coefficient (Log₁₀ K_{ow}) is 2.50 at 25°C indicating that chloropicrin would not be expected to bioaccumulate in mammalian cells.

Mobility

Chloropicrin moves rapidly in soils within twelve inches of injection but may diffuse to a maximum depth of four feet in sandy soil. Since it is only slightly soluble in water, it will not move rapidly in aquatic environments. In an anaerobic aquatic/soil system, chloropicrin was converted to nitromethane with a half-life of 1.3 hours. In the absence of sunlight or microorganisms, chloropicrin does not undergo hydrolysis.

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No UN1580
Proper Shipping Name Chloropicrin
Hazard class 6.1
Packing Group I
Special Provisions Toxic-Inhalation Hazard Zone B
Marine Pollutant Yes.

IATA

Forbidden

IMDG

UN number UN1580
Proper Shipping Name Chloropicrin
Transport hazard class(es) 6.1
Packing Group I
Special Provisions Toxic-Inhalation Hazard Zone B
Marine Pollutant Yes

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Chloropicrin	X	ACTIVE	X	X	X	X	X	X	X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
Chloropicrin - 76-06-2	76-06-2	>99.5	1.0

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Chloropicrin 76-06-2	X	X	X

16. OTHER INFORMATION

NFPA**Health Hazards**

4

Flammability

0

Instability

3

Special Hazards

None

HMIS**Health Hazards**

4

Flammability

0

Physical hazards

3

Personal Protection

See Section 8

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Revision Note: New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet