



SAFETY DATA SHEET

Tri-Form 35

1. Identification

Product identifier**Tri-Form 35****Other means of identification****SDS number**

135-USA-TCI

Synonyms**Recommended use**

Soil fumigant

NOTE TO PESTICIDE HANDLERS: If the pesticide product end-use labeling contains hazard information, specific instructions, or requirements that conflict with this Safety Data Sheet (SDS), follow the hazard information, instructions, or requirements on the labeling. See Section 15 of this SDS for further information.

Recommended restrictions

Use of this product requires supervision by a certified pesticide applicator.

Manufacturer/Supplier information**Company name**

Trical, Inc.

Address8100 Arroyo Circle
Gilroy, CA 95020-7305, USA**Telephone**

(831) 637-0195

E-mailsds@trical.com**Emergency phone number****FOR CHEMICAL EMERGENCY, (Spill, Leak, Fire, Exposure, or Accident), Call CHEMTREC:**

CHEMTREC (US/Canada) 1-800-424-9300 (24/7)

CHEMTREC (International) +1 703-527-3887 (collect calls accepted)

2. Hazard Identification

Note: Supplemental information is [bracketed] or noted as such in Section 2.

Physical hazards

Flammable Liquids

Category 3

Health hazards

Acute Toxicity, inhalation

Category 1

Acute Toxicity, dermal

Category 3

Acute Toxicity, oral

Category 3

Skin Corrosion

Category 1C

Serious Eye Damage

Category 1

Eye Irritation

Category 2

Sensitization, skin

Category 1

Carcinogenicity

Category 2

Specific Target Organ Toxicity, single exposure

Category 3 (respiratory tract irritation)

Specific Target Organ Toxicity, single exposure

Category 1 (respiratory system damage)

Specific Target Organ Toxicity, repeated exposure

Category 1 (damage to organs)

Aspiration Hazard

Category 1

Environmental hazardsHazardous to the Aquatic Environment,
acute hazard

Category 1

Hazardous to the Aquatic Environment,
long-term hazard

Category 1

Additional GHS Classification for Product When it is Under Pressure in Cylinder**Physical hazards**

Chemicals Under Pressure

Category 2

Label elements



Cylinder pictogram applies when product is packaged in a cylinder.



Signal word

DANGER

Hazard statement

H226 Flammable liquid and vapor.
H330 Fatal if inhaled.
H301, H311 Toxic if swallowed or in contact with skin.
H314, H318 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation. [vapor contact]
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H370 Causes damage to respiratory system by inhalation.
H372 Causes damage to respiratory system, hemal system, and liver through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.
H400, H410 Very toxic to aquatic life and with long lasting effects.

Additional hazard statement when product is packaged in a cylinder

H283 Flammable chemical under pressure: May explode if heated.

Precautionary statement

Prevention

Obtain, read and follow all safety instructions before use.
 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 Wear protective gloves/protective clothing/eye protection/face protection.
 In case of inadequate ventilation, wear respiratory protection.
 Do not breathe gas or vapors.
 Use only outdoors or in a well-ventilated area.
 Wash hands thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Do not get in eyes, on skin, or on clothing. Do not touch eyes.
 Contaminated work clothing must not be allowed out of the workplace.
 Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take action to prevent static discharges.
 Avoid release to the environment [except for authorized use].

Response

Specific treatment is urgent [see Section 4 of SDS].
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do not induce vomiting. Get emergency medical help immediately.
 If skin irritation or rash occurs: Get medical advice.
 If exposed or concerned: Get medical advice.
 Wash contaminated clothing before reuse.
 In case of fire: Use dry chemical or foam to extinguish. [See Section 5 of SDS.]
Storage Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional precautionary statements when product is packaged in a cylinder

[Cylinders are not equipped with relief valves or fusible overpressure devices.]

Do not spray on an open flame or other ignition source.

In case of leakage, eliminate all ignition sources.

Fight fire remotely due to the risk of cylinder rupture.

Hazard(s) not otherwise classified (HNOC) - none

3. Composition/Information on Ingredients**Mixtures**

Ingredient	Synonyms	CAS number	Concentration by weight %
1,3-Dichloropropene	1,3-D	542-75-6	65.0*
Chloropicrin	Trichloronitromethane	76-06-2	35.0*

* Product label will reflect nominal active ingredient percentages.

4. First-Aid Measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Provide oxygen, if available, or artificial respiration, if needed. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center for further treatment advice.
Skin contact	Remove contaminated clothing immediately and wash skin for 15-20 minutes with water, and if available, use soap. Call a physician or poison control center for treatment advice. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse. Refer to Section 4, General Information for more information on contaminated clothing.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms and effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Causes respiratory distress and irritation. Early symptoms may include throat and nose irritation, nausea or vomiting. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	<p>Material if aspirated into the lungs may cause rapid absorption through the lungs which may result in systemic effects. If the product is ingested, probable mucosal damage may contraindicate the use of gastric lavage. Treat the affected person appropriately. In case of ingestion, the decision of whether or not to induce vomiting should be made by the attending physician. Provide general supportive measures and treat symptomatically.</p> <p>Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.</p> <p>Note to Physician: If lavage is performed, endotracheal and/or esophageal control is suggested. Danger from lung toxicity must be weighed against toxicity when considering emptying the stomach.</p>
General information	Take off immediately all contaminated clothing. Aerate contaminated clothing in a secure area downwind and away from people. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. Discard any shoes or clothing items that cannot be decontaminated, after aerating.

5. Fire-Fighting Measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	<p>Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed. Combustion products include: Carbon monoxide. Carbon dioxide. Chlorine. Hydrogen chloride. Phosgene. Nitrosyl chloride. Nitrogen oxides.</p> <p>Per transport regulations, cylinders containing Chloropicrin are not equipped with relief valves or fusible overpressure devices.</p>
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment and instructions	In case of fire and/or explosion do not breathe smoke, gas or vapors. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Flammable liquid and vapor.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Move leaking or damaged cylinders outdoors or to an isolated location, observing strict safety precautions. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. For small spill, consider initial isolation for at least 60 meters (200 feet). For large spill, consider initial isolation for at least 200 meters (600 feet).

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Work upwind, if possible.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment [except for authorized use]. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304).

7. Handling and Storage

Precautions for safe handling	Obtain special instructions before use. Valve protection caps must remain in place unless container is secured. Close valve after each use and when container is empty. Do not drop, drag, slide or roll cylinders on their sides. Do not subject cylinders to rough handling or to abnormal mechanical shock. Use a suitable hand truck or forklift to move heavier cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. Do not heat container by any means to increase the discharge rate of product from the container. Use only dry nitrogen gas to pressurize cylinders. Polyethylene or Teflon® tubing may be used to transfer this product at low pressures. Regulator must be operated with a secondary pressure relief valve. DO NOT use high pressure
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hose connection between the nitrogen supplying cylinder and this product's cylinder. Do not handle until all safety precautions have been read and understood. Vapors may form explosive mixtures with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Do not breathe vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not taste or swallow. Avoid prolonged exposure. Do not get this material on clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Store at temperatures not exceeding 55°C/131°F.

8. Exposure Controls and Personal Protection

Occupational exposure limits

Components	Type	Value
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)		
Chloropicrin (CAS 76-06-2)	PEL	0.1 ppm (0.7 mg/m3)
US. ACGIH Threshold Limit Values		
1,3-Dichloropropene (CAS 542-75-6)	TLV-TWA	1.0 ppm (5.0 mg/m3)
Chloropicrin (CAS 76-06-2)	TLV-TWA	0.1 ppm (0.7 mg/m3)
US. NIOSH: Pocket Guide to Chemical Hazards		
1,3-Dichloropropene (CAS 542-75-6)	REL-TWA	1.0 ppm (5.0 mg/m3)
Chloropicrin (CAS 76-06-2)	REL-TWA	0.1 ppm (0.7 mg/m3)

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

1,3-Dichloropropene (CAS 542-75-6) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

1,3-Dichloropropene (CAS 542-75-6) Skin designation applies.

US - Tennessee OELs: Skin designation

1,3-Dichloropropene (CAS 542-75-6) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

1,3-Dichloropropene (CAS 542-75-6) Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

1,3-Dichloropropene (CAS 542-75-6) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Water flushing facilities must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields and a face shield. Wear a full-face respirator, if needed.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Incidental contact: < 10 minutes. Nitrile, butyl rubber or neoprene gloves are recommended.

More than incidental contact: Viton or Silver Shield ® gloves are recommended.

Other

Avoid contact with the skin. When performing tasks with potential for contact with liquid, wear appropriate chemical resistant clothing to prevent skin contact. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant face shield, boots, apron, whole body suits or other protective clothing. The protection suit must be able to provide reliable protection against a broad range of industrial chemicals. Examples include Tychem and Saranex.

Respiratory protection

For non-handlers and non-applicators:

- If working in an environment where the eyes are stinging and watery due to exposure to this product, wear a NIOSH-approved full facepiece respirator with an organic vapor cartridge.

For all EPA handlers (including applicators):

- Must wear a half-face air-purifying respirator equipped with an organic-vapor cartridge and a particulate pre-filter.
- If sensory irritation (tearing, burning of the eyes or nose) is experienced and handlers remain in the application block or buffer zone, handlers must wear at a minimum either: a NIOSH certified full facepiece air-purifying respirator equipped with an organic vapor cartridge and a particulate pre-filter, or a gas mask with a canister approved for organic vapor.

Emergency or planned entry into unknown concentrations or IDLH conditions:

- Any self-contained breathing apparatus that has a full-facepiece and is operated in a pressure-demand or other positive-pressure mode.

Escape:

- Air-purifying respirator equipped with full facepiece and an organic vapor cartridge.
- Any air-purifying hood style CBRN escape-certified respirator.
- Air-purifying respirator with canisters (TC-14G) that include the escape gas mask (canister) respirator, the gas mask (canister) respirator, and the filter self-rescuer.
- Any self-contained breathing apparatus with hood or full-facepiece mask.

Respirators certified "escape only" can only be used for escape purposes and CANNOT be used for responding to emergencies.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

NOTE: Handlers and applicators must follow the end-use pesticide label instructions for each of the task situations that require personal protective equipment.

When using, do not eat, drink or smoke. Do not get this material on clothing. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and Chemical Properties

Physical state	Liquid.
Color	Transparent to pale yellow. Brown if in prolonged contact with metal packaging.
Odor	Sweet, pungent. Irritating.
Odor threshold	700 ppb in 2-5 seconds (Chloropicrin)
Melting point/freezing point	Not available.
Initial boiling point / boiling range	Not available.
Flammability (solid, gas)	Flammable liquid only.
Flash point	99.5 °F (37.5 °C) Tag Closed Cup
Auto-ignition temperature	Not available.

Lower and upper explosion limit (flammability limit) (% by volume)	
Flammability limit – lower	> 5.5 % @ 186 °F
Flammability limit – upper	< 14.5 % @ 186 °F
Decomposition temperature	Not available.
pH	2.38 in 1% v/v aqueous
Kinematic viscosity	0.61 cSt @ 40 °C 0.71 cSt @ 20 °C
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Vapor pressure	Not available.
Relative density	1.3454 @ 20 °C (68 °F)
Density	1.343 g/ml °C [11.23 lbs/gal @ 20 °C (68 °F)]
Vapor density	Not available.
Particle characteristics	Not applicable – only applicable to solids.
Other information	
Evaporation rate	Fast.

10. Stability and Reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use. Chemical reaction may occur if mixed with or allowed to contact oxidizing agent.
Conditions to avoid	Heat may cause the cylinders to rupture or burst. Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Copper. Aluminum. Zinc. Cadmium. Magnesium. Acids. Bases. Amines.
Hazardous decomposition products	During combustion: Carbon monoxide. Carbon dioxide. Chlorine. Hydrogen chloride. Phosgene. Nitrosyl chloride. Nitrogen oxides.

11. Toxicological Information

Information on likely routes of exposure

Inhalation	Fatal if inhaled. May cause damage to organs by inhalation.
Skin contact	Fatal in contact with skin. Causes severe skin burns. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage. Lachrymation (discharge of tears).
Ingestion	Toxic if swallowed. Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Dermatitis. Rash. Early symptoms of low exposure are stinging/tearing of the eyes and irritation of the throat. Nausea or vomiting may occur.

Information on toxicological effects

Acute toxicity	Fatal if inhaled. Fatal in contact with skin. Toxic if swallowed.
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Components	Species	Test Results
Product ATE Calculation		
Acute <i>Inhalation</i> , LC ₅₀	Rat	> 50.99 ppm, 4 hours GHS Category 1
<i>Dermal</i> , LD ₅₀	Rabbit	> 429.20 mg/kg GHS Category 3
<i>Oral</i> , LD ₅₀	Rat	> 65.61 mg/kg GHS Category 3
1,3-Dichloropropene (CAS 542-75-6)		
Acute <i>Inhalation</i> , LC ₅₀	Rat	> 2.7 mg/L (595 ppm), 4 hours
<i>Dermal</i> , LD ₅₀	Rabbit	> 333 mg/kg
<i>Oral</i> , LD ₅₀	Rat	> 110 mg/kg
Chloropicrin (CAS 76-06-2)		
Acute <i>Inhalation</i> , LC ₅₀	Rat	18.9 ppm, 4 hours, (0.127 mg/L)
<i>Dermal</i> , LD ₅₀	Rabbit	926 mg/kg
<i>Oral</i> , LD ₅₀	Rat	37.5 mg/kg

Chloropicrin - Human Sensory Irritation Testing for Chloropicrin Response Study (Cain, 2004)

73 - 150 ppb	Mild irritant to eyes and throat.
73 ppb	Human sensory irritation threshold (eye irritation).
> 150 ppb	Headache, nausea, and vomiting may occur. These symptoms are temporary and reversible following termination of exposure.
> 300 ppb	Respiratory symptoms may increase in severity and include difficulty in breathing.
> 580 ppb, 8 hours	Life-threatening effects including pulmonary edema can occur.
> 2000 ppb, 10 minutes	Life-threatening effects including pulmonary edema can occur

Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage	Causes serious eye damage.
Sensitization, respiratory	Not classified.
Sensitization, skin	May cause an allergic skin reaction (Buehler test in albino guinea pigs).
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Suspected of causing cancer. (1,3-Dichloropropene ingredient)
IARC Monographs	1,3-Dichloropropene (CAS 542-75-6) - 2B Possibly carcinogenic to humans.
NTP Report on Carcinogens	1,3-Dichloropropene (CAS 542-75-6) - Reasonably Anticipated to be a Human Carcinogen.
OSHA Specifically Regulated Substances	Not listed. (29 CFR 1910.1001-1050)
Reproductive toxicity	Not classified.
Specific target organ toxicity, single exposure	Causes damage to organs (Respiratory system). Respiratory tract irritation.
Specific target organ toxicity, repeated exposure	Causes damage to organs (lung, liver, kidney, respiratory system) through prolonged or repeated exposure.
Aspiration hazard	Not classified.
Chronic effects	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Causes damage to organs through prolonged or repeated exposure.

12. Ecological Information

Ecotoxicity: Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

1,3-Dichloropropene (CAS 542-75-6)

Aquatic - Acute

Concentration Effect	Test Results	Surrogate Organism	Species
EC ₅₀	0.67 mg/l, 96 hours Shell growth inhibition	Crustacea	Oyster (<i>Crassostrea cucullata</i>)
LC ₅₀	2.78 - 4.63 mg/l, 96 hours	Fish	Rainbow trout (<i>Oncorhynchus mykiss</i>)
LC ₅₀	0.91 mg/l, 96 hours	Fish	Sheepshead minnow (<i>Cyprinodon variegatus</i>)

Aquatic - Acute

LOEC	0.109 mg/l, 21 days	Crustacea	Daphnia
NOEC	0.073 mg/l, 21 days	Crustacea	Daphnia
LOEC	0.204 mg/l, 33 days	Fish	Fish
NOEC	0.117 mg/l, 33 days	Fish	Fish

Chloropicrin (CAS 76-06-2)

Aquatic - Acute

Concentration Effect	Test Results	Surrogate Organism	Species
EC ₅₀	120 µg/l, 48 hours	Crustacea	Daphnia
EC ₅₀	6.4 µg/l, 96 hours	Crustacea	Oyster (<i>Crassostrea cucullata</i>)
EC ₅₀	50 µg/l, 96 hours	Fish	Bluegill (<i>Lepomis macrochirus</i>)
EC ₅₀	11 µg/l, 96 hours	Fish	Fish
EC ₅₀	100 µg/l, 96 hours	Fish	Sheepshead minnow (<i>Cyprinodon variegatus</i>)

Aquatic - Chronic

NOEC	11 µg/l, 7 days	Plant	Common duckweed (<i>Lemna minor</i>)
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Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	No data available.		
Partition coefficient n-octanol / water (log Kow)	1.82	1,3-Dichloropropene (CAS 542-75-6)	
	2.38	Chloropicrin (CAS 76-06-2)	
Mobility in soil	No data available.		
Other adverse effects	This product is toxic to mammals, birds, fish, and aquatic invertebrates.		

13. Disposal Considerations

Disposal instructions	Follow EPA approved label for Pesticide disposal directions. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Do not discharge this product or its effluent into lakes, rivers, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F. A toxicity characteristic leaching procedure (TCLP) will be necessary to determine if a toxicity waste code is also applicable. Corrosivity (pH) will need to be determined. The waste code(s) should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues and unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Avoid accidental discharge into water courses or unintended release onto the ground.
Contaminated packaging	Since emptied containers may retain product residue, follow pesticide use label instructions to clean container before final disposal. Cleaned, empty containers should be taken to a qualified re-conditioner or to an approved waste site for recycling or disposal.

14. Transport Information

US DOT / TDG (Highway/Road/Rail)

UN number	UN3489
UN proper shipping name	Toxic by inhalation liquid, flammable, corrosive, n.o.s. (Chloropicrin; 1,3-Dichloropropene)
Transport hazard class(es)	
Class	6.1
Subsidiary risk	(3, 8)
Packing group	I
Environmental hazards	
Marine pollutant	Yes (Chloropicrin; 1,3-Dichloropropene)
Special precautions for user	Read safety instructions, SDS, and emergency procedures before handling.
Special provisions	2, B9, B14, B32, B74, T20, TP2, TP13, TP27, TP38, TP45
Packaging exceptions	None
Packaging non bulk	227
Packaging bulk	244
Reportable quantity (RQ)	1,3-Dichloropropene is 100 pounds (45.4 kilograms).

IATA (Air) **Forbidden to transport any amount by air**

IMDG (Water)

UN number	UN3489
UN proper shipping name	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. (Chloropicrin; 1,3-Dichloropropene)
Transport hazard class(es)	
Class	6.1
Subsidiary risk	(3, 8)
Packing group	I
Environmental hazards	
Marine pollutant	Yes (Chloropicrin; 1,3-Dichloropropene)
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory Information

US federal regulations

EPA FIFRA	<p>This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.</p> <p>DANGER, POISON, Skull and crossbones, Fatal if inhaled, swallowed or absorbed through the skin. Poisonous liquid and vapor. Corrosive. Liquid causes skin burns and irreversible eye damage. Do not get in eyes, on skin or on clothing. Do not breathe mist or vapor. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. May cause lung, liver, and kidney damage and respiratory system irritation upon prolonged contact. The use of this product may be hazardous to your health. This product contains 1,3-dichloropropene, which has been determined to cause tumors in laboratory animals. Risks can be reduced by exactly following directions for use, precautionary statements, and by wearing the personal protective equipment specified in the labeling. Chloropicrin is readily identifiable by smell. Exposures to very low concentrations of vapor will cause irritation of eyes, nose and throat. Continued exposure after irritation occurs, or exposure to higher concentration may cause painful irritation or temporary blindness.</p>
U.S. OSHA	<p>This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard Standard, 29 CFR 1910.1200.</p>

U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed. 1,3-Dichloropropene (CAS 542-75-6)

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA Hazard categories for Tier II reporting**

See Physical and Health hazards listed in Section 2 of this SDS.

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
1,3-Dichloropropene	542-75-6	65.0
Chloropicrin	76-06-2	35.0

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

1,3-Dichloropropene (CAS 542-75-6)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

1,3-Dichloropropene (CAS 542-75-6)
Chloropicrin (CAS 76-06-2)

US. New Jersey Worker and Community Right-to-Know Act

1,3-Dichloropropene (CAS 542-75-6)
Chloropicrin (CAS 76-06-2)

US. Pennsylvania Worker and Community Right-to-Know Law

1,3-Dichloropropene (CAS 542-75-6)
Chloropicrin (CAS 76-06-2)

US. Rhode Island RTK

1,3-Dichloropropene (CAS 542-75-6)
Chloropicrin (CAS 76-06-2)

US. California Proposition 65

WARNING: This product can expose you to chemicals, including 1,3-Dichloropropene (CAS 542-75-6), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov

International Inventories 1-3, Dichloropropene (CAS 542-75-6)
Chloropicrin (CAS 76-06-2)

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL) [CAS 76-06-2 only]	Yes
Canada	Non-Domestic Substances List (NDSL) [CAS 542-75-6 only]	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Mexico	National Inventory of Chemical Substances (INSQ)	Yes
New Zealand	New Zealand Inventory (NZIoC)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

* A "Yes" indicates this product complies with inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

This SDS complies with the US OSHA Hazard Communication Standard (29 CFR 1910.1200) and the 7th edition (2017) of the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS) [also known as the Purple Book] and with the hazard classes listed in the 8th edition of the UN Purple Book (2019) as adopted by US OSHA.

Version 3 date May 10, 2023

Revision history

11-15-14	Initial version
01-12-18	Sections 3, 15: Revised composition of ingredients to reflect concentration by weight % Section 15: Revised SARA Hazard Categories
05-10-23	Section 2: Removed Exclamation mark pictogram Section 11: Added Product acute toxicity testing information

Further information None

NFPA ratings



NFPA Hazard Scale:

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
CBRN	Chemical, Biological, Radiological, and Nuclear
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
EC ₅₀	Half Maximal Effective Concentration - concentration of a material in water, a single dose which is expected to cause a biological effect on 50% of a group of test species.
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
IDLH	Immediately Dangerous to Life and Health - the maximum airborne concentration from which one could escape [within 30 minutes] without any escape-impairing symptoms or any irreversible health effects.

IMDG	International Maritime Dangerous Goods
LC ₅₀	Lethal Concentration - median dose at which 50% of test animals die from inhalation
LD ₅₀	Lethal Dose - median dose at which 50% test animals die from oral or dermal exposure
NFPA	National Fire Protection Association
NOEC	No Observed Effect Concentration
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Health and Safety Administration
ppb	part(s) per billion
ppm	part(s) per million
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit Workers can be exposed to a maximum of four STEL periods per 8-hour shift, with at least 60 minutes between exposure periods.
TDG	Transport of Dangerous Goods (Canada)
TWA	Time Weighted Average airborne concentration for a worker in an 8 hour day
US DOT	United States Department of Transportation

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. Inherent Risks of Use: It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.) abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of the seller. To the extent consistent with applicable law, all such risks shall be assumed by buyer.