

LEICESTER'S N.Z. LTD

SAFETY DATA SHEET

Product

TRI-FORM 60

Date: 25/06/2019

Version 3

1. Identification of the substance & the company

Product name	TRI-FORM 60
Chemical name	Chloropicrin 60% plus 1,3 Dichloropropene 40%
Type of product and use	A broad-spectrum pesticide used as a soil fumigant
Company identification Address and telephone	Leicester's NZ Ltd 6 Waitane Place, Onekawa, Napier. 06 843 5330 or 0800 658 158
Emergency Telephone Number:	Leicester's N.Z. Ltd 0800 658 158 NATIONAL POISONS CENTRE 0800 243 622

2. Hazards identification

Product is classified as hazardous according to the Hazardous Substances (Classification) Notice 2017 of the HSNO Act, 1996.

HSNO Approval: HSR100563

HSNO Classifications: 3.1C, 6.1A (Inhalation), 6.1B (Oral, Dermal), 6.5A, 6.5B, 6.6B, 6.7B, 6.9A (Oral, Inhalation), 8.2C, 8.3A, 9.1A, 9.2B, 9.3A, 9.4B

Pictograms:



Signal word:

DANGER

Hazard Statements:

H226 Flammable liquid and vapour
H300 Fatal if swallowed
H310 Fatal in contact with skin
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H330 Fatal if inhaled
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 Suspected of causing genetic effects
H351 Suspected of causing cancer
H370 Causes damage to organs
H400 Very toxic to aquatic life
H422 Toxic to the soil environment
H431 Very toxic to terrestrial vertebrates
H442 Toxic to terrestrial invertebrates

Prevention Statements:

P102 Keep out of reach of children
P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed
P240 Ground/bond container and receiving equipment
P241 Use explosion-proof electrical/ventilating /lighting equipment.

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P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P260 Do not breathe gas
P262 Do not get in eyes, on skin or on clothing
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well-ventilated area
P272 Contaminated work clothing should not be allowed out of the workplace
P273 Avoid release to environment
P280 Wear protective gloves/protective clothing/eye protection
P284 Wear respiratory protection.
P285 In case of inadequate ventilation wear respiratory protection (full-face respirator or powered air-purifying respirator fitted with approved organic cartridges).

Response Statements:

P101 If medical advice is needed, have product container or label at hand.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest until in a position comfortable for breathing.
P310 Immediately call a POISON CENTRE or doctor.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310 Immediately call a POISON CENTRE or doctor.
P303 + P361 + P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P363 Wash contaminated clothing before re-use.
P310 Immediately call a POISON CENTRE or doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice.
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
+P338
P310 Immediately call a POISON CENTRE or doctor.
P309 + P311 IF exposed or you feel unwell: Call a POSION CENTRE or doctor.
P370 + P378 In case of fire: Use water spray, dry chemical, carbon dioxide or alcohol resistant foam extinguishing media.
P391 Collect spillage

Storage Statements:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P235 Keep cool
P405 Store locked up

Disposal Statements:

P501 Dispose of product and containers in accordance with local regulations.

3. Composition/information on ingredients

Component	CAS No.	% w/w
Chloropicrin	76-06-2	60
1,3-Dichloropropene	542-75-6	40

4. First-aid measures (*)

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON Centre or doctor for advice.
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.

Skin contact

Remove contaminated clothing immediately and wash skin for 15 -20 minutes with water, and soap if available. Immediately call a POISON Centre or doctor for advice. Chemical burns must be treated by a doctor.

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Eye contact	All contaminated leather items should be discarded. Other contaminated clothing must either be discarded or thoroughly ventilated and washed before re-use. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON Centre or doctor for advice.
Ingestion	If swallowed, wash mouth thoroughly with plenty of water. Do NOT induce vomiting. Immediately call a POISON Centre or doctor for advice. ***** NOTE: Never give an unconscious person anything to drink. *****
Note to the physician	Chloropicrin is powerful lachrymator; commonly referred to as tear gas. No specific antidote. If aspirated into the lungs may cause rapid absorption through the lungs which may result in systemic effects. If ingested, probably mucosal damage may contraindicate the use of gastric lavage. If lavage is performed, endotracheal and/or esophageal control is suggested. Treat the affected person appropriately. In case of ingestion, the decision on whether or not to induce vomiting should be made by the attending doctor. Provide general supportive measures and treat symptomatically.

5. Fire-fighting measures

Extinguishing media	Carbon dioxide, dry chemicals, foam, water spray (fog). Do NOT use water jet and this will spread the fire.
Fire fighting procedure	Evacuate area. Flammable product and vapors. Forms explosive mixtures with air. Vapours can travel considerable distances from source, flashback may occur. Eliminate or remove ignition sources.
Protective equipment and precautions for fire-fighters	Wear self-contained breathing apparatus in positive pressure mode and appropriate protective clothing. If possible, stop material flow immediately. Do not extinguish burning gas unless flow can be shut off immediately. Vapors form flammable mixtures at ordinary temperatures. Use water spray to keep cylinder(s) cool. If there is no risk, move cylinder(s) away from fire.
Unusual fire and explosion	Highly toxic and irritating fumes (carbon monoxide, carbon dioxide, chlorine, hydrogen chloride, phosgene, nitrosyl chloride, nitrogen oxides) released in fire situations.
Hazards	Cylinders may rupture if heated by fire. Cylinders are not fitted with relief valves or fusible overpressure devices.

6. Accidental release measures

Personal precautions	Evacuate area and keep personnel upwind of spill/leak. Wear personal protective equipment including self-contained breathing apparatus in positive pressure mode. Avoid low places, ventilate closed spaces before entering and work upwind if possible. Eliminate ignition sources. Use grounded explosion and spark proof equipment.
Environmental precautions	Avoid release to environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water and avoid discharge into drains, water courses or not the ground. Notify local authorities in event of any spillage.

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Containment and cleanup

For small spills: cover spillage with diatomaceous earth, clay, sand or other non-combustible material. Collect contaminated spillage material into a labelled polyethylene or steel container that can be sealed.
Clean any surfaces with an absorbent material (e.g. cloth, fleece) to remove residual contamination.
For large spills (>35 litres): isolate leaking or damaged container, contain and prevent material entering waterways, sewers, drains, low lying or confined areas. Recover material for disposal.
If necessary, use water spray to reduce vapors or to divert vapour cloud drift but with care to prevent environmental contamination of watercourses.

7. Handling and storage

Handling

Certified handler and CSL required.
Flammable liquid and vapour. Obtain special instructions before use. Refer to product label and operating manual. Comply with HSNO and WorkSafe controls.
Do not handle until all safety precautions have been read and understood.
Valve protection caps must remain in place unless container is secured.
Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed.
Ground/bond container and receiving equipment Use explosion-proof electrical/ventilating /lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Wear personal protective equipment. Do not breathe gas. Do not get in eyes, on skin or on clothing.
Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Move and transport containers with care. Do not use hooks, rope sling, etc. to unload. Use hand or fork trucks to firmly cradle cylinders. Do not bump or drag containers.
Use only dry nitrogen gas (180 psig maximum) to pressurize cylinders and tanks. Polyethylene or Teflon tubing may be used to transfer chloropicrin at low pressures.
Do not use containers or application equipment made of magnesium, aluminum, zinc or cadmium. Avoid contact with strong bases.

Storage

Store containers upright, in a secure manner (under lock and key); keep cool either outdoors under ambient conditions, or indoors in a well-ventilated area, away from seeds, foods/feed-stuffs and human and animal habitation. Store at temperatures that do not exceed 55°C.
Do not store with other flammable or combustible liquids, or with oxidisers or combustible solid materials.
Use appropriate storage signage.
When not in use keep valves closed and secure take-off fitting cap and valve bonnet.

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8. Exposure controls / personal protection

Occupational Exposure limits:	Chloropicrin WES-TWA 0.1 ppm (0.67 mg/m ³) 1,3-Dichloropropene WES-TWA 1.0 ppm (4.5 mg/m ³)
Engineering controls:	Explosion proof general and local exhaust ventilation. Ventilation must be sufficient to maintain atmospheric concentration below TWA.
Personal protection equipment:	A full-face respirator or powered air-purifying respirator fitted with approved organic vapour cartridges and particulate pre-filter is required if vapours are above the permissible exposure limit. Self-contained breathing apparatus or supplied-air respirator with a full face-piece are required in oxygen deficient areas or where concentrations > 5 ppm may be present.
- Respiratory protection	Use Viton or barrier laminate gloves.
- Gloves	Glasses with side shields when full face respiratory protection is not required.
- Eye protection	When using, wear loose fitting chemical resistant clothing, chemical resistant apron, chemical resistant footwear and socks. In confined area wear a vapor tight suit. Do not wear jewelry, rubber protective clothing or rubber boots.
- Clothing	When using this material, do not eat, drink or smoke. Safety shower and eye bath should be provided.
-Hygiene measures	

9. Physical and chemical properties

Appearance	Transparent thin colourless to pale yellow liquid
Odour	Pungent sweet penetrating odor
Odour threshold	700 ppb in 2 -5 seconds (chloropicrin)
pH	2.56 (as 1% v/v in water)
Melting point/range	Not available
Boiling point/range	Not available
Flashpoint	49 °C (Tag Closed Cup)
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	Not available
Vapour pressure	Not available
Relative vapour density (air 1)	Not available
Specific gravity	1.453 (at 20 °C)
Solubility:	
- Solubility in water	Not available
Partition coefficient: n-octanol/water	1.82 1,3-dichloropropene 2.38 chloropicrin
Autoignition temperature	Not available
Decomposition temperature	Not available
Viscosity	0.60 cSt (at 40 °C) 0.71 cSt (at 20 °C)

10. Stability and reactivity

Stability	Stable in sealed containers and under normal conditions. Store at temperatures that do not exceed 55°C. Mixtures with water can form corrosive products.
Materials to avoid	Strong oxidizers, copper, zinc, aluminum, cadmium and magnesium metals and their alloys, acids, bases, amines.
Conditions to avoid	Ignition and heat sources, incompatible materials.

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Hazardous decomposition	During combustion; carbon dioxide, carbon monoxide, chlorine, hydrogen chloride, phosgene, nitrosyl chloride, nitrogen oxides.
Hazardous polymerization	Will not occur.

11. Toxicological information

Acute toxicity:	DANGER: May be fatal in inhaled or ingested or in contact with skin. If ingested, may cause severe gastrointestinal damage and symptoms may include nausea, vomiting, abdominal pain, collapse and death. May result in burns and permanent damage to mouth, throat, esophagus and stomach.
Aspiration hazard:	If aspirated into lungs, may be rapidly absorbed and result in injury to other body organs and systems.
Respiratory irritation:	Airborne exposure may cause irritant effects.
Skin corrosion/irritation:	Severe damage (corrosive) if liquid contacts with skin. Can cause redness and may cause an allergic skin reaction.
Serious eye damage/irritation:	Severe damage (corrosive) if liquid contacts with eyes. Exposure to low concentrations can cause reversible eye irritation. Vapours may cause immediate tearing and irritation of eyes Contact with liquid or high concentrations of gas with the eyes may cause severe but usually reversible injury involving temporary blindness.
Respiratory or skin sensitization:	Respiratory and contact sensitizer.
Germ cell mutagenicity:	Classified as may cause genetic effects.
Carcinogenicity:	Classified as may cause cancer.
Reproductive toxicity:	No information to indicate effects on fertility or unborn child.
Specific organic toxicity (repeated and single exposure):	Cause damages if inhaled or ingested. May be absorbed through the skin in sufficient amount to cause systemic toxicity. Exposure to low levels will cause damage. Affects blood, hemopoietic system, liver.
Narcotic affects:	No information available.
Toxicological data:	Chloropicrin Mouse inhalation LC ₅₀ 0.066 mg/m ³ /4 hour Rat oral LD ₅₀ 37.5 mg/kg Rat dermal LD ₅₀ 100 mg/kg 1,3-Dichloropropene Rat inhalation LC ₅₀ 2.7– 3.07 mg/m ³ /4 hour Rat oral LD ₅₀ 57 mg/kg Rat dermal LD ₅₀ 800 - 2000 mg/kg

12. Ecological information

Ecotoxicity	Highly ecotoxic to aquatic life. Toxic in soil environment, and to both terrestrial vertebrates and invertebrates.
Persistence and degradability	1,3-Dichloropropene is not rapidly degradable.
Bioaccumulation	Neither chloropicrin nor 1,3-dichloropropene are expected to bioaccumulate.
Mobility in soil	Chloropicrin nor 1,3-dichloropropene are soluble in water and mobile in soil.
Other adverse effects	This product is toxic to mammals, birds, fish and both aquatic and terrestrial invertebrates.

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Ecotoxicological data

Chloropicrin
Rainbow trout, LC₅₀ (96hr) 0.0165 mg/L
Daphnia pulex EC₅₀ (48 hr) 0.063 mg/L
Selenastrum capricornutum EC₅₀ (72hr) 0.00016 mg/L

1,3-Dichloropropene
Fathead minnow, LC₅₀ (96hr) 0.239 mg/L
Daphnia magna EC₅₀ (48 hr) 6.2 mg/L
Skeletonema costatum EC₅₀ (96hr) 1.06 mg/L
Honey bee, *Apis mellifera* LC₅₀ contact 6.6 µg/bee

13. Disposal considerations (*)

Waste disposal

The recommended method is incineration. If a suitable designated combustion chamber is not available, return MARKED containers to supplier.
Observe all National and local environment regulations when disposing of this material.

Disposal of packaging (*)

Contact authorities to ensure proper compliance.
Return marked empty containers to supplier.

14. Transportation information (*)

NZ5433:2012 *Transport of dangerous goods on land.*

UN No.

3489

Proper shipping name:

TOXIC BY INHALATION LIQUID,
FLAMMABLE, CORROSIVE, N.O.S (CHLOROPICRIN,
1,3-DICHLOROPROPENE)

Class:

6.1

Sub-class:

3, 8

Packing group:

I

Hazchem code:

Not assigned

15. Regulatory information (*)

New Zealand

Approved substance under the HSNO Act 1996.

HSR100563 : TRI-FORM 60

Hazardous classifications: 3.1C, 6.1A (Inhalation), 6.1B (Oral, Dermal), 6.5A, 6.5B, 6.6B, 6.7B, 6.9A (Oral, Inhalation), 8.2C, 8.3A, 9.1A, 9.2B, 9.3A, 9.4B.

Refer to www.epa.govt.nz for information on Controls for this substance.

CERTIFIED HANDLER and TRACKING Controls apply.

Users require Controlled Substance License (CSL).

Additional restrictions and requirements apply.

For additional controls refer to www.worksafe.govt.nz and HSW Safe Work Instrument DWI 14-1.

Approved under the ACVM Act 1997: P008550

Refer to www.foodsafety.govt.nz for Conditions of Registration.

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16. Other information (*)

Safety Data Sheet issued: 25 June 2019
Reason for issue: Add reference to product label and operating manual under Section 7 Handling.
Replaces: 22 February 2019
Next review: Within 5 years of date of issue.

Abbreviations

b.w.	body weight
EC ₅₀	The concentration of a toxicant which induces a response halfway between the baseline and half a maximum after a specified time.
EPA	New Zealand Environmental Protection Authority
GHS	Global Harmonised System
HSNO	Hazardous Substances and New Organisms
kg	kilogram
LC ₅₀	The average concentration of a chemical or mixture in air as a gas, vapour, mist, fume or dust capable of killing 1/2 of the test animals exposed by inhalation under specific conditions. Median lethal concentration (LC50) is often expressed in ppm or mg/m ³ .
LCL ₀ humans.	The lowest concentration of a chemical or mixture in air reported to have caused the death of animals or humans.
LD ₅₀	The amount of a toxic agent that is sufficient to kill 50 percent of a population of animals usually within a certain time.
mg	milligram
NOEL	No effect exposure level
NZIoC	New Zealand Inventory of Chemicals
ppm	part per million
SDS	Safety Data Sheet
STEL	Short Term Exposure Limit (15 minute exposure period)
TWA	Time-Weighted Average (8 hours exposure period)
ug	microgram
WES	Workplace Exposure Standard

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