

SAFETY DATA SHEET

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This revision issued: October, 2015

Section 1 - Identification of The Material and Supplier



SIPCAM

Sipcam Pacific Australia Pty. Ltd.

A.B.N. 94 073 176 888

Level 1

191 Malop Street

Geelong, Victoria, 3220

Phone: (03)5223 3746 (business hours)

Trade Name: Saprof Fungicide
APVMA Code: 53799
Chemical nature: Triforine is an azole analogue. It is presented here in a suitable solvent system.
Product Use: Agricultural fungicide for use as described on the product label.
Creation Date: December, 2007
This version issued: October, 2015 and is valid for 5 years from this date.

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xi, Irritating. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code. However, this is a C1 Combustible Liquid so must be stored and handled as specified in AS 1940 "The storage and handling of flammable and combustible liquids."

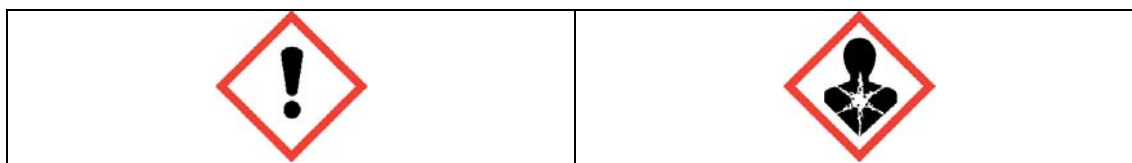
Risk Phrases: R61, R36/38. May cause harm to the unborn child. Irritating to eyes and skin.

Safety Phrases: S23, S36, S24/25. Do not breathe vapours or mists. Wear suitable protective clothing. Avoid contact with skin and eyes.

SUSMP Classification: S6

ADG Classification: None allocated. Not a Dangerous Good under the ADG Code.

UN Number: None allocated



GHS Signal word: WARNING.

HAZARD STATEMENT:

- H227: Combustible liquid.
- H315: Causes skin irritation.
- H320: Causes eye irritation.
- H360: May damage fertility or the unborn child.

PREVENTION

- 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 and hot surfaces. - No smoking.
- P262: Do not get in eyes, on skin, or on clothing.
- P264: Wash contacted areas thoroughly after handling.
- P281: Use personal protective equipment as required.

RESPONSE

- P362: Take off contaminated clothing and wash before reuse.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313: If exposed or concerned: Get medical advice.
- P332+P313: If skin irritation occurs: Get medical advice.
- P337+P313: If eye irritation persists: Get medical advice.

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P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog.

STORAGE

P410: Protect from sunlight.

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & colour: Light brown liquid.

Odour: Weak amine odour.

Major Health Hazards: Triforine has a low acute oral and dermal toxicity and a moderate acute inhalation toxicity. This product may cause harm to unborn children, irritating to eyes and skin.

Potential Health Effects

Inhalation:

Short term exposure: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

Long Term exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short term exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Long Term exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short term exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.

Long Term exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short term exposure: Significant oral exposure is considered to be unlikely. This product is unlikely to cause any irritation problems in the short or long term.

Long Term exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:

SWA: No significant ingredient is classified as carcinogenic by SWA.

NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: Dimethyl Formamide is Class 3 - unclassifiable as to carcinogenicity to humans.

See the IARC website for further details. A web address has not been provided as addresses frequently change.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Triforine	26644-46-2	190g/L	not set	not set
Dimethyl formamide	68-12-2	238g/L	30	not set
N-Methyl-2-pyrrolidone	872-50-4	238g/L	103	309
Emulsifiers		338g/L	not set	not set
Other non hazardous ingredients	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

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Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Skin Contact: Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: 70°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: Flammable Category 4 (GHS), C1 combustible (AS 1940)

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include butyl rubber, Teflon, PE/EVAL, Responder. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8).

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

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Storage: Note that this product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. If you store large quantities (tonnes) of such products, we suggest that you consult your state's Dangerous Goods authority in order to clarify your obligations regarding their storage.

Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
Dimethyl formamide	30	not set
N-Methyl-2-pyrrolidone	103	309

The ADI for Triforine is set at 0.02mg/kg/day. The corresponding NOEL is set at 2.7mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, June 2014.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: butyl rubber, Teflon, PE/EVAL, Responder.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Light brown liquid.
Odour:	Weak amine odour.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	Approx 45% at 100°C
Vapour Pressure:	80mPa at 20°C (Triforine)
Vapour Density:	No data.
Specific Gravity:	No data.
Water Solubility:	Dispersible.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	No data.
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: water, acids, bases, strong oxidising agents, halogenated hydrocarbons.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing

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atmospheres. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Toxicity: Acute Toxicity: Triforine has a low acute oral and dermal toxicity and a moderate acute inhalation toxicity. The acute oral LD₅₀ for Triforine in rats is greater than 16,000 mg/kg body weight. The acute percutaneous LD₅₀ for rats is greater than 10,000 mg/kg. Acute dermal LD₅₀ for rats is greater than 10,000 mg/kg body weight. The one hour acute inhalation LC₅₀ for Triforine in rats is greater than 4.5 mg/l air. This compound is rapidly absorbed and metabolized by the rat. The acute oral LD₅₀ for Triforine in mice is greater than 6,000 mg/kg; and greater than 2,000 mg/kg in dogs. The acute dermal LD₅₀ for rabbits is greater than 10,000 mg/kg body weight.

Chronic Toxicity: In two-year feeding studies, the No-effect-level for Triforine in dogs was 100 mg/kg diet and 625 mg/kg diet for rats.

Reproductive Effects: A decreased number of foetuses and an increased number of resorptions were observed in a study of pregnant rats fed Triforine at a dietary level of 1,600 mg/kg. In another developmental study, rabbits were fed doses of 0, 5, 25 and 125 mg/kg/day of Triforine. The maternal No-observable-effect-level (NOEL) was 5 mg/kg/day; the maternal Lowest-effect-level (LEL) was 25 mg/kg/day, rabbits exhibited reduced food intake and loss of body weight. The foetotoxic NOEL was 5 mg/kg/day; the foetotoxic LEL was 25 mg/kg/day, decreased average relative weight was observed.

Teratogenic Effects: In a developmental study, rabbits were fed doses of 0, 5, 25 and 125 mg/kg/day of Triforine.

The teratogenic NOEL was greater than 125 mg/kg/day. The formulated product Saprol is not considered a teratogen.

Mutagenic Effects: Triforine is not considered a mutagen.

Carcinogenic Effects: In short and long-term studies of Triforine, no irreversible or carcinogenic effects were observed.

Organ Toxicity: High dosages in subchronic animal studies demonstrated adverse effects on red blood cells and deposition of iron in several organs. If Triforine is ingested, the main hazard is aspiration of the solvent carrier into the lungs resulting in chemical pneumonitis.

Fate in Humans and Animals: In a metabolism study of Triforine fed to rats, 94% was excreted after 48 hours and 96% was excreted after 168 hours; 18% by faecal excretion and 78% by renal excretion. Two metabolites were found in urine, one of which was chloralformamide.

Ingredient

Risk Phrases

N-methyl-2-pyrrolidone

Conc>=10%: T; R61; R36/37/38

N-methyl-2-pyrrolidone is a SWA Class 2 Reproductive risk, may cause harm to the unborn child.

Section 12 - Ecological Information

Insufficient data to be sure of status.

Effects on Birds: The acute oral LD₅₀ for Triforine in bobwhite quail is greater than 5,000 mg/kg. The dietary LC₅₀ for bobwhite quail is 1,850 ppm in the diet. Mallard ducks had a dietary LC₅₀ of greater than 4,640 ppm in the diet.

Effects on Aquatic Organisms: At 50 mg/l in water, there are no signs of poisoning in *Lebistes reticulatus*. Rainbow trout and bluegill sunfish tolerate 1,000 mg/l in water for 96 hours without symptoms. The 96-hour LC₅₀ for rainbow trout and bluegill sunfish is greater than 1,000 mg/l. The formulated product Saprol is of low hazard to fish and aquatic invertebrates. Both rainbow trout and bluegill sunfish had a 96-hour LC₅₀ of greater than 500 mg/l. The aquatic invertebrate Daphnia (water flea) had a 48-hour EC₅₀ of greater than 25 mg/l. Saprol was also noted to be of low hazard to Scenedesmus subspicatus (aquatic algae). The 96-hour EC₅₀ was greater than 380 mg/l.

Effects on Other Animals (Nontarget species): No toxic effect was observed in honeybees at less than or equal to 1,000 mg/kg diet. Triforine is considered of low hazard to honeybees and to the predatory mite *Typhlodromus pyrii*. It is also of low hazard to earthworms at recommended dose rates.

ENVIRONMENTAL FATE

Breakdown of Chemical in Soil and Groundwater: The half-life of Triforine in soil is approximately 3 weeks. A range of non-fungitoxic metabolic end-products are formed, presumably including piperazine. It is considered non-persistent in soil.

Breakdown of Chemical in Surface Water: No information currently available.

Breakdown of Chemical in Vegetation: Triforine is translocated in plants upward through the root system. Triforine is phytotoxic to some varieties of pears.

Birds: LD₅₀ bobwhite quail: >5000mg/kg

Daphnia: EC₅₀ 117mg/L

Fish: LC₅₀ rainbow trout: >1000mg/L

LC₅₀ bluegill sunfish: >1000mg/L

Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the

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disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

Section 14 - Transport Information

ADG Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredients: Dimethyl formamide, N-Methyl-2-pyrrolidone are mentioned in the SUSMP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

Contact Points:

AUSTRALIA

Police and Fire Brigade:	Dial	000
If ineffective:	Dial	1100 (Exchange)
For emergency response:	Dial	1800 033 111

National Poisons Information Centre: Dial 13 1126 (from anywhere in Australia)

Please read all labels carefully before using product.

The Safety Data Sheet (SDS) augments the label and should not be used in place of regulatory approved product labels which are attached to or accompanying the product container. This SDS provides important health, safety and environmental information for personnel that are manufacturing, distributing, transporting and storing the product, including emergency responders and other product handlers. The label provides information specifically for product users.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)
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<http://www.kilford.com.au/> Phone (02)9251 4532