MATERIAL SAFETY DATA SHEET

This revision issued: March, 2004

Section 1 – Identification of Chemical Product and Company

Sipcam Pacific Australia Pty. Ltd.
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23 – 31 Gheringhap Street
Geelong, Victoria, 3220

Substance:	Alpha cypermethrin is a pyrethroid insecticide
Trade Name:	**Alphasip Duo Insecticide**
Product Use:	Agricultural insecticide for use as described on the product label
Creation Date:	September 2000
Revision Date:	**March 2004**

Section 2 – Hazards Identification

Statement of Hazardous Nature
This product is classified as Hazardous according to the criteria of NOHSC Australia.

Risk Phrases: R43, R21/22.

Safety Phrases: S2, S20, S24, S28, S36/39.

SUSDP Classification: S6

ADG Classification: Class 9, (ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.)

UN No: 3082

Emergency Overview

Physical Description and Colour: Clear pale brown liquid.

Odour: Characteristic hydrocarbon odour.

Major Health Hazards: The onset of symptoms from Alpha-cypermethrin exposure varies depending upon such factors as the route of absorption and quantity involved. In patients with occupational poisoning, skin symptoms usually develop within 4-6 hours after exposure, with systemic symptoms occurring as late as 48 hours after exposure. Paraesthesia of the facial skin can develop approximately 30 minutes after exposure and does not usually last beyond 24 hours when exposure is terminated. Following ingestion, the initial symptoms involve the gastrointestinal tract, developing 10-60 minutes after exposure. Patients suffering from acute oral poisoning usually develop prominent digestive symptoms such as epigastric pain, nausea and vomiting. Severely poisoned patients may have frequent convulsive attacks, coma, or pulmonary oedema. The prognosis is good if treated, with usually full recovery even in severely poisoned patients. (The hospitalisation period is usually longer than 4 weeks). Death may occur from respiratory paralysis.

Potential Health Effects

Inhalation: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Skin Contact: Available data shows that this product is harmful, but symptoms are not available. In addition product is unlikely to cause any discomfort in normal use

Eye Contact: Available data shows that this product is not harmful. However product is believed to be mildly irritating, to eyes, but is unlikely to cause anything more than mild transient discomfort.

Ingestion: Available data shows that this product is harmful, but symptoms are not available. This product is unlikely to cause any irritation problems in the short or long term.

Carcinogen Status

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

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

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

Section 3 – Composition / Information on Ingredients

Ingredients	CAS No	Conc, %	TWA, mg/m^3	STEL, mg/m^3
Alpha-cypermethrin	67375-30-8	10	not set	not set
Liquid hydrocarbon	no data	76	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 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 should not be exceeded for more than 15 minutes and should not be repeated for 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.

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 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: No specific health data is available for this product. If any unusual symptoms become evident, or if in doubt, contact a Poisons Information Centre or a doctor.

Eye Contact: Quickly and gently blot or brush product away. Flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until irritation has ceased, while holding the eyelid(s) open. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 – Fire Fighting Measures

Fire & Explosion Hazard: This product is classified as a C1 combustible product. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions. 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. Water fog or fine spray is the preferred medium for large fires.

Special Fire Fighting procedures: When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Flashpoint: Not flammable

Flammability limits: No Data

Unusual Fire & Explosion Hazards: No Data

Stability: This product is unlikely to react or decompose under normal storage conditions

Section 6 – Accidental Release Measures

In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. As a minimum , wear overalls, goggles and gloves. Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Dispose of only in accord with all regulations.

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.

Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this class of poison. Check packaging - there may be further storage instructions on the label.

Section 8 – Exposure Controls and Person Protection

Exposure Standards: Exposure limits have not been established by NOHSC for any of the significant ingredients in this product. The ADI (Acceptable Daily Intake) for Alpha-cypermethrin is set at 0.05mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 4.7mg/kg/day. Values taken from Australian ADI List, June 2002.

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

Respiratory equipment: AS/NZS 1715, **Protective Gloves**: AS 2161, **Industrial Clothing**: AS2919, **Industrial Eye Protection**: AS1336 and AS/NZS 1337, **Occupational Protective Footwear**: AS/NZS2210.

Respiratory Protection: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Safety deluge showers should be provided near to where this product is being used.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

Clothing: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered.

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 – Physical and Chemical Properties

Physical Description and Colour:	Clear pale brown liquid
Odour:	Characteristic hydrocarbon odour
Boiling point:	Not available
Vapour pressure:	No data
Melting/softening point:	No specific data. Liquid at normal temperatures.
Volatile materials:	No specific data. Expected to be low at 100°C
Flashpoint:	Not Flammable
Specific gravity:	No specific data. Expected to be less than 1.0
Solubility in water:	Forms emulsions
Coeff Oil/water distribution:	for Alpha-cypermethrin - 6.94 (log P octanol/water)

Section 10 – Stability and Reactivity

Stability:	This product is unlikely to react or decompose under normal storage conditions. This product should be kept in a cool place, preferably below 30°C.
Polymerisation:	This product is unlikely to undergo polymerisation processes.
Decomposition Products:	Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.
Materials to avoid:	strong oxidising agents

Section 11 – Toxicological Information

Acute Toxicity: Synthetic pyrethroid compounds vary in their toxicity as do the natural pyrethrins. Inhaling high levels of pyrethrum may bring about asthmatic breathing, sneezing, nasal stuffiness, headache, nausea, incoordination, tremors, convulsions, facial flushing and swelling, and burning and itching sensations. The most severe poisoning's have been reported in infants, who are not able to efficiently break down pyrethrum. The lowest lethal oral dose of pyrethrum is 750 mg/kg for children and 1,000 mg/kg for adults. Oral LD50 values of pyrethrins in rats range from 200

mg/kg to greater than 2,600 mg/kg. Some of this variability is due to the variety of constituents in the formulation. Mice have a pyrethrum oral LD50 of 370 mg/kg. Animals exposed to toxic amounts may experience tongue and lip numbness, nausea, and diarrhoea. Symptoms may also include incoordination, tremors, convulsions, paralysis, respiratory failure, and death. Pyrethroids can cause two quite different responses at near lethal doses in rats; aggressive sparring and a sensitivity to external stimuli progressing to tremors is the one response and pawing and burrowing behaviour, and salivation leading to chronic seizures is the other. Human response to these two different types of Pyrethroids has not yet been evaluated. Recovery from serious poisoning in mammals is fairly rapid. Rats and rabbits are not affected by large dermal applications. On broken skin, pyrethrum produces irritation and sensitisation, which is further aggravated by sun exposure.

Chronic Toxicity: Absorption of pyrethrum through the stomach and intestines and through the skin is slow. However, humans can absorb pyrethrum more quickly through the lungs during respiration. Response appears to depend on the pyrethrum compound used. Overall, pyrethrins and Pyrethroids are of low chronic toxicity to humans and the most common problems in humans have resulted from the allergenic properties of pyrethrum. Patch tests for allergic reaction are an important tool in determining an individuals sensitivity to these compounds. Many of the natural and synthetic compounds can produce skin irritation, itching, pricking sensations and local burning sensations. These symptoms may last for about two days.

Reproductive Effects: Rabbits that received pyrethrins orally at high doses during the sensitive period of pregnancy had normal litters. A group of rats fed very high levels of pyrethrins daily for three weeks before first mating had litters with weanling weights much lower than normal. Overall, pyrethrins appear to have low reproductive toxicity.

Teratogenic Effects: The one rabbit reproduction study performed showed no effect of pyrethrins on development of the offspring. More information is needed.

Mutagenic Effects: No information was found.

Carcinogenic Effects: No carcinogenic status has been established for pyrethrins or Pyrethroids.

Organ Toxicity: In mammals, tissue storage has not been recorded. At high doses, pyrethrum can be damaging to the central nervous system and the immune system. When the immune system is attacked by pyrethrum, allergies can be worsened. Animals fed large doses of pyrethrins may experience liver damage. Rats fed pyrethrin at high levels for two years showed no significant effect on survival, but slight, definite damage to the livers was observed. Inhalation of high doses of pyrethrum for 30 minutes each day for 31 days caused slight lung irritation in rats and dogs.

Fate in Humans and Animals: Pyrethrins, Pyrethroids, and their metabolites are not known to be stored in the body nor excreted in the milk. The urine and faeces of people given oral doses of pyrethrum contain chrysanthemumic acid and other metabolites. These metabolites are less toxic to mammals than are the parent compounds. Pyrethrins I and II are excreted unchanged in the faeces. Other pyrethrum components undergo rapid destruction and detoxification in the liver and gastrointestinal tract.

Section 12 - Ecological Information

This product is very toxic to aquatic organisms. This product is toxic to bees. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Section 13 - Disposal Considerations

Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

Pyrethrin is extremely toxic to aquatic life, such as bluegill and lake trout while it is slightly toxic to bird species, such as mallards. Toxicity increases with higher water temperatures and acidity. Natural pyrethrins are highly fat soluble, but are easily degraded and thus do not accumulate in the body. These compounds are toxic to bees also. Because pyrethrin-I, pyrethrin-II, and allethrin have multiple sites in their structures that can be readily attacked in biological systems, it is unlikely that they will concentrate in the food chain.

ENVIRONMENTAL FATE

Two pyrethroid synthetic insecticides, permethrin and cypermethrin, break down in plants to produce a variety of products. Pyrethrins have little residual effect. In stored grain, 50% or more of the applied pyrethrins disappear during the first three or four months of storage. At least 80% of what remains is removed by handling, processing, and cooking. Pyrethrins alone provide limited crop protection because they are not stable. As a result, they are often combined with small amounts of antioxidants to prolong their effectiveness. Pyrethrum compounds are broken down in water to nontoxic products. Pyrethrins are inactivated and decomposed by exposure to light and air. Pyrethrins are also rapidly decomposed by mild acids and alkalis. Stored pyrethrin powders lose about 20% of their potency in one year. As the pyrethrins are purified, their stability decreases; thus, pure pyrethrin-I and pyrethrin-II are the least stable of the pyrethrins. Purified pyrethrins are very expensive and are only available for laboratory uses.

For Alpha-cypermethrin:

Birds: LD_{50} quail: >10,000mg/kg LD_{50} mallard: >10,000mg/kg

Fish: LC_{50} rainbow trout: 0.0028mg/L

Bees: LD_{50} 0.059µg/bee

Worms: LD_{50} (Worms) >100mg/kg

Section 14 - Transport Information

ADG Code: Class 9, Miscellaneous Dangerous Goods

Hazchem Code: 2W

Packaging Group: III

Packaging Method: 3.8.9

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

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
AICS	Australian Inventory of Chemical Substances
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOHSC	National Occupational Health and Safety Commission
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & 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.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company. The responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

This MSDS is prepared in accord with the NOHSC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]

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