SAFETY DATA SHEET

FREEZONE S-MART GRAIN IGR GRAIN PROTECTOR APVMA Approval No. 64016

SECTION 1. IDENTIFICATION

Product name:	FREEZONE S-MART GRAIN IGR GRAIN PROTECTOR APVMA Approval No. 64016
Recommended Use:	Agricultural insecticide for use as described on the product label.
Restrictions on Use:	None specified.
Supplier of SDS:	Freezone Public Health Pty Ltd
Supplier Address:	18 Gilpin Street Shorncliffe QLD 4017
Supplier Phone:	07 3869 4436
Supplier Fax:	07 3869 4433
Supplier Email:	info@freezone.net.au

Emergency Telephone Number: Craig Jephcott 0412 200 252

Poisons Information Centre 13 11 26

SECTION 2. HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

Acute toxicity (Category 4)

Skin irritation (Category 2)

Serious eye damage / eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

Aspiration Toxicity (Category 1)

Flammable liquids (Category 4)

Acute aquatic toxicity (not classified)

Chronic aquatic toxicity (not classified)

Signal Word Danger

Label Elements and Precautionary Statements

Hazard Pictograms:

Exclamation Mark

Health Hazard

Environment

Hazard Statements:

Harmful if swallowed.

Harmful in contact with skin.

Harmful if inhaled

May cause long lasting harmful effects to aquatic life.

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

May cause drowsiness or dizziness.

May be fatal if swallowed and enters airways.

Combustible liquid.

Precautionary Statements:

General

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Prevention

Wear protective gloves, eye and face protection.

Do not eat, drink or smoke when using this product.

Avoid breathing product fumes.

Use only outdoors or in a well-ventilated area.

Keep away from flames and hot surfaces. – No smoking.

Wash hands thoroughly after handling.

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Rinse mouth

Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Call a POISON CENTRE or doctor/physician if you feel unwell.

Wash contaminated clothing before reuse.

If skin irritation occurs: Get medical advice/attention.

In case of fire: Use carbon dioxide for extinction.

Disposal

Dispose of contents/ container according to product label or in accordance with local Regulations

Storage

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

Keep cool. Protect from sunlight.

Store locked up.

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

S-METHOPRENE contains 300g/L CAS number: 65733-16-6 EC number: 613-834-0	**Classification** Acute toxicity (Category 4) Skin irritation (Category 2) Serious eye damage / eye irritation (Category 2A) Specific target organ toxicity - single exposure (Category 3) Acute aquatic toxicity (not classified) Chronic aquatic toxicity (not classified)

LIQUID HYDROCARBONS contains 404g/L CAS number: secret EC number: secret	**Classification** n/a

Non-hazardous ingredients contains <200g/L CAS number: secret EC number: secret	**Classification** n/a

Full text for all hazard statements is contained in Section 16.

SECTION 4. FIRST AID MEASURES

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 SDS with you when you call.
Inhalation	No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.
Ingestion	First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
Skin contact	Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed. If in doubt obtain medical advice.
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. Protection of first aiders Use suitable protective equipment for surrounding materials.

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

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

This product is classified as a C1 combustible product. There is a slight risk of an explosion from this product if commercial quantities are 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.

Specific hazards arising from the chemical

Specific hazards	None known.
Hazardous combustion products	Thermal combustion of product may produce harmful gasses or vapours.

Special protective equipment and precautions for firefighters

Firefighting precautions	When fighting fires involving significant quantities of this product, wear a splash suit complete with self contained breathing apparatus.

Protective equipment	Self-contained breathing apparatus, suitable gloves and boots.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective glasses and, preferably, 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 above. Otherwise, not normally necessary.
Environmental precautions	Avoid discharge into drains or watercourses or onto the ground.
Clean up methods	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. 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 SDS 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

Precautions for handling	Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS 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.
Conditions for safe 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 "Materials to avoid" 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.
Storage precautions	Note that his 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 laws in order to clarify your obligations regarding their storage.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits
Exposure limits have not been established by NOHSC for any of the significant ingredients in this product.

The Acceptable Daily Iintake for Methoprene is set at 0.4mg/kg/day.
The corresponding No-observable-effect- level is set at 35mg/kg/day.

Values taken from Australian ADI List, Aug 2003.

Exposure controls

Ventilation	No special ventilation requirements are normally necessary for this product. However, make sure that the work environment remains clean and that vapours and mists are minimised.
Eye Protection	Eye protection such as protective glasses or goggles is recommended when this product is being used.
Skin Protection	You should avoid contact even with mild skin irritants. Therefore, you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.
Protective Material Types	We suggest that protective clothing be made from the following materials: rubber, PVC.
Respirator	Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Straw Coloured
Odour	Mild hydrocarbon odour.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	184°C at 100kPa
Flash point	68°C (Pensky Martin closed cup).
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	Combustible
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	No information available.
Bulk density	No information available.
Solubility(ies)	Emulsifiable.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions when used and stored in accordance with label.
Reactivity	This product is unlikely to react or decompose under normal storage conditions.

Possibility of hazardous reactions	No hazardous reactions known.
Conditions to avoid	Exposure to heat.
Incompatible materials	Oxidising agents.
Hazardous decomposition	Does not decompose when used and stored as recommended. Combustion or thermal decomposition will produce Carbon dioxide, and if combustion is incomplete, carbon monoxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Toxicological effects	Not regarded as a health hazard under current legislation.

Acute toxicity - oral

Notes (oral LD_{50})	The oral LD50 for Methoprene in rats is greater than 34,600 mg/kg, and in dogs is greater than 5000 mg/kg

Acute toxicity - dermal

Notes (dermal LD_{50})	LD50 values of greater than 2000 to 3000 mg/kg in rabbits. Methoprene is not an eye or skin irritant, and it is not a skin sensitizer.

Acute toxicity - inhalation

Notes (inhalation LC_{50})	The inhalation LD50 for Methoprene in rats is greater than 210 mg/L. No overt signs of poisoning have been reported in incidents involving accidental human exposure to Methoprene.

Skin corrosion/irritation

Animal data	Contact may cause skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation	Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation	Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation	Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro	Methoprene does not appear to be mutagenic. No Methoprene-related mutagenic effects were observed in rats following a single dose of 2000 mg/kg

Carcinogenicity

Carcinogenicity	No tumours were seen in an 18-month feeding study with mice, or in a 24-month oncogenicity study with rats. These data suggest that Methoprene is not carcinogenic.

IARC carcinogenicity	None of the ingredients are listed or exempt.

Reproductive toxicity

Reproductive toxicity - fertility	Experimental data indicate that no reproductive hazards are associated with Methoprene. No Methoprene-related effects were observed in three- generation reproduction studies in rats receiving dietary doses of 125 mg/kg/day.
Reproductive toxicity- development	No available data.

Specific target organ toxicity

STOT- single exposure	No data available.
STOT- repeated exposure	The target organ primarily affected by Methoprene after long-term exposure is the liver.

Aspiration hazard

Aspiration hazard	Based on available data the classification criteria are not met.

General information

Inhalation	A single exposure may cause the following adverse effects: Headache. Exhaustion and weakness.
Skin contact	May cause redness and irritation.
Eye contact	No specific symptoms known.
Route of entry	Inhalation, ingestion, skin contact or eye contact.
Target organs	Lungs.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Effects on birds:	Methoprene is slightly toxic to birds. The reported 5- to 8-day LC50 values for Methoprene are greater than 10,000 ppm in mallard ducks and bobwhite quail, and the acute oral LD50 for Methoprene is greater than 4640 ppm in chickens. In mallards an acute oral LD50 of greater than 2000 mg/kg was determined. Nonlethal effects that may affect survival of the birds did appear at acute oral doses of 500 mg/kg. These effects appeared as soon as 2 hours after treatment and persisted for up to 2 days and included slowness, reluctance to move, sitting, withdrawal, and incoordination. These effects may decrease birdsurvival by making them temporarily more susceptible to predation. No effects were observed in the reproduction of bobwhite quail and mallard ducks at 30 ppm constant feeding of Methoprene.
Effects on aquatic organisms:	Methoprene is slightly to moderately toxic to fish. The reported 96-hour LC50 values for Methoprene were 4.6 mg/L in bluegill sunfish, 4.4 mg/L in trout, and greater than 100 mg/L in channel catfish and largemouth bass. Methoprene residues may have a slight potential for bioconcentration in bluegill sunfish and crayfish. Methoprene is very highly toxic to some species of freshwater, estuarine, and marine invertebrates, while the acute LC50 values are greater than 100 mg/L in freshwater shrimp, and it is greater than 0.1 mg/L in estuarine mud crabs. Methoprene had very little effect, if any, on exposed non-target aquatic

	organisms including water fleas, damselflies, snails, tadpoles, and mosquito fish.
Effects on other organisms:	Tests with earthworms showed little if any toxic effects on contact. It is nontoxic to bees.
Breakdown in soil and groundwater:	Methoprene is of low persistence in the soil environment; reported field half-lives are up to 10 days. In sandy loam, its half-life was calculated to be about 10 days. When Methoprene was applied at an extremely high application rate of 1 pound per acre, its half-life was less than 10 days. In soil, microbial degradation is rapid and appears to be the major route of its disappearance from soil. Methoprene also readily undergoes degradation by sunlight. Methoprene is rapidly and tightly sorbed to most soils. It is slightly soluble in water. These properties, along with its low environmental persistence make it unlikely to be significantly mobile. In field leaching studies, it was observed only in the top few inches of the soil, even after repeated washings with water.
Breakdown in water:	Methoprene degrades rapidly in water. Studies have demonstrated half-lives in pond water of about 30 and 40 hours at initial concentrations of 0.001 mg/L and 0.01 mg/L, respectively. At normal temperatures and levels of sunlight, technical Methoprene is rapidly degraded, mainly by aquatic microorganisms and sunlight.
Breakdown in vegetation:	Methoprene is biodegradable and non persistent, even in plants treated at very high rates. It has a half-life of less than 2 days in alfalfa when applied at a rate of 1 pound per acre. In rice, the half-life is less than 1 day. In wheat, its half-life was estimated to be 3 to 7 weeks, depending on the level of moisture in the plant. Plants grown in treated soil are not expected to contain Methoprene residues.
Toxicity	Based on available data the classification criteria are not met.
Persistence and degradability	No data available.
Partition coefficient	No information available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

General information	Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.
Disposal of packaging	If empty containers cannot be disposed of according to the product label directions, disposal of this material must be in

accordance with your local or area regulatory authorities.

SECTION 14. TRANSPORT INFORMATION

General	Not classified as dangerous for transport within Australia.
UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(S-methoprene)
Transport hazard class(es)	9.
Packing group	III.
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL and the IBC Code	Not applicable.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Legislation	*Work Health and Safety Act 2011* (Qld)
	Work Health and Safety Regulation 2011 (Qld)
	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)

SECTION 16. OTHER INFORMATION

Revision date	31/12/16
Revision	2
Supersedes date	01/11/12
Complete hazard statements	H227 Combustible liquid H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H312 Harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H400 Very toxic to aquatic life.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's

knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.