

## Section 1 - Identification Of Chemical Product And Company

**Rentokil Initial Pty Ltd**

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<b>Substance:</b>	Methoprene is an insect growth regulator.
<b>Trade Name:</b>	Rentokil IGR Grain Protectant
<b>Product Code:</b>	53038
<b>Product Use:</b>	Agricultural insecticide for use as described on the product label.
<b>Creation Date:</b>	<b>February, 2004</b>
<b>This version issued:</b>	<b>February, 2009</b>

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: Not classified as hazardous according to the criteria of NOHSC Australia.  
Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** Not Hazardous - No criteria found.

**Safety Phrases:** S24/25. Avoid contact with skin and eyes.

**SUSDP Classification:** S5

**ADG Classification:** None allocated. Not a Dangerous Good.

**UN Number:** None allocated

### Emergency Overview

**Physical Description & colour:** Clear, straw coloured liquid.

**Odour:** Mild hydrocarbon odour.

**Major Health Hazards:** : Methoprene is practically nontoxic when ingested or inhaled and non toxic by dermal absorption. No significant risk factors have been found for this product.

### Potential Health Effects

See section 11 for Chronic exposure studies.

#### Inhalation

**Short term exposure:** Significant inhalation exposure is considered to be unlikely. 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:

**Short term exposure:** Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be irritating, but is unlikely to cause anything more than mild transient discomfort.

#### Eye Contact:

**Short term exposure:** Exposure via eyes is considered to be unlikely. This product is believed to be mildly irritating, to eyes, but is unlikely to cause anything more than mild transient discomfort.

#### 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.

#### 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 <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Methoprene	40596-69-8	3	not set	not set
Liquid hydrocarbons	secret	72	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 (0800 764 766 in New Zealand) and is available at all times. Have this MSDS 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.

**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.

**Ingestion:** First aid is not generally required. 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 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.

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

**Flash point:** 68°C (Pensky Martin closed cup)

**Upper Flammability Limit:** No data.

**Lower Flammability Limit:** No data.

**Autoignition temperature:** No data.

**Flammability Class:** C1

## Section 6 - Accidental Release Measures

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. 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.

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 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.

**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 laws 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 "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.

## 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**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

### ASCC Exposure Limits

### TWA (mg/m<sup>3</sup>)

### STEL (mg/m<sup>3</sup>)

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

The ADI for Methoprene is set at 0.4mg/kg/day. The corresponding NOEL is set at 35mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Aug 2003.

**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.

## Section 9 - Physical and Chemical Properties:

<b>Physical Description &amp; colour:</b>	Clear, straw coloured liquid.
<b>Odour:</b>	Mild hydrocarbon odour.
<b>Boiling Point:</b>	184°C at 100kPa
<b>Freezing/Melting Point:</b>	No specific data. Liquid at normal temperatures.
<b>Volatiles:</b>	No specific data. Expected to be low at 100°C.
<b>Vapour Pressure:</b>	No data.
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	0.91 approx at 20°C
<b>Water Solubility:</b>	Emulsifiable.
<b>pH:</b>	No data.
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water distribution:</b>	No data
<b>Autoignition temp:</b>	No data.

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## 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:** strong oxidising agents.

**Fire Decomposition:** 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.

**Polymerisation:** This product is unlikely to undergo polymerisation processes.

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## Section 11 - Toxicological Information

**Toxicity: Acute toxicity:** The oral LD<sub>50</sub> for Methoprene in rats is greater than 34,600 mg/kg, and in dogs is greater than 5000 mg/kg. It is slightly toxic by skin exposure, with reported dermal LD<sub>50</sub> 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. The inhalation LC<sub>50</sub> 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.

**Chronic toxicity:** No Methoprene-related effects were observed in 2-year feeding trials with rats given doses of 250 mg/kg/day, nor in mice given 30 mg/kg/day. Liver changes were observed in mice fed 50 to 250 mg/kg/day of Methoprene during an 18-month study. Increased liver weights occurred in rats fed 250 mg/kg/day for 90 days, but not during a 24-month feeding study in which rats were fed 125 mg/kg/day.

**Reproductive effects:** 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.

**Teratogenic effects:** There have been no teratogenic effects in animals dosed with Methoprene; teratogenic effects were not seen in rats at doses of about 25 mg/kg/day, or in rabbits at doses of about 15 mg/kg/day. Methoprene does not appear to be teratogenic.

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

**Carcinogenic effects:** No tumors 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.

**Organ toxicity:** The target organ primarily affected by Methoprene after long-term exposure is the liver.

**Fate in humans and animals:** In mammals, Methoprene is rapidly and completely broken down and excreted, mostly in the urine and faeces. Some evidence suggests that Methoprene metabolites are incorporated into natural body components. Methoprene is excreted unchanged in cattle faeces in amounts that are sufficient to kill some larvae that breed in dung.

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## Section 12 - Ecological Information

**Effects on birds:** Methoprene is slightly toxic to birds. The reported 5- to 8-day LC<sub>50</sub> values for Methoprene are greater than 10,000 ppm in mallard ducks and bobwhite quail, and the acute oral LD<sub>50</sub> for Methoprene is greater than 4640 ppm in chickens. In mallards an acute oral LD<sub>50</sub> 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 bird survival 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 LC<sub>50</sub> 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 LC<sub>50</sub> 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.

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**Environmental Fate:**

**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.

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## Section 13 - Disposal Considerations

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

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## 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.

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## Section 15 - Regulatory Information

**AICS:** All of the significant ingredients in this formulation are to be found in the public AICS Database. The following ingredients: Liquid hydrocarbons, are mentioned in the SUSDP.

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## Section 16 - Other Information

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

**Acronyms:**

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>CAS number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Number</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>ASCC</b>	Office of the Australian Safety and Compensation Council
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSDP</b>	Standard for the Uniform Scheduling of Drugs & Poisons
<b>UN Number</b>	United Nations Number

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 MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR 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.

Please read all labels carefully before using product.

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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