

### 1: Identification of the Substance and Supplier

<b>Product Name</b>	<b>CRUSADER</b>
<b>Recommended Use</b>	Herbicide
<b>Suppliers Details</b>	Orion AgriScience Ltd Unit 1, 15 Sir Gil Simpson Drive, Harewood, Christchurch, 8053 PO Box 39 071, Harewood, Christchurch, 8545
<b>Web Address</b>	www.orionagriscience.co.nz
<b>Email Address</b>	orders@orionagriscience.co.nz
<b>Telephone Number</b>	(03) 928 2386 (office hours), 0800 674 6627 (free phone)
<b>Emergency Telephone</b>	0800 CHEMCALL (0800 243 622) (24 hours)
<b>National Poison Centre</b>	0800 POISON (0800 764 766) (24 hours)
<b>Date of Issue/Revision</b>	March 2025

### 2: Hazards Identification

<b>Hazard Pictograms</b>	
<b>Signal Words</b>	<b>Danger</b>
<b>Hazard Classes:</b>	<b>Hazard Statements:</b>
Aspiration hazard (Cat. 1)	H304 May be fatal if swallowed and enters airways
Eye Irritation (Cat. 2)	H319 Causes serious eye irritation
Hazardous to the aquatic environment chronic (Cat. 2)	H411 Toxic to aquatic life with long lasting effects
<b>Precautionary Statements:</b>	
Prevention	P101 If medical advice is need have product container of label at hand P102 Keep out of reach of children P264 Wash hands thoroughly after handling P273 Avoid release to the environment P280 Wear eye protection / face protection Keep out of reach of children. Read label before use. Avoid contact with eyes and skin. Do not breathe in the spray mist. When mixing or applying, wear personal protection as described in section 8. Take all reasonable steps to ensure that this product does not cause any significant adverse effects to the environment beyond the application area. Do not apply directly into or onto water.
Response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTRE/doctor P331 Do NOT induce vomiting P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove P337+P313 If eye irritation persists: Get medical advice/attention P391 Collect spillage First aid measures described in section 4. Contain and collect spillage for disposal. In an emergency call 111, Police or Fire Brigade. For specialist advice in an emergency only, call 0800 CHEMCALL (0800 243 6225) (24 hrs).
Storage	P405 Store locked up
Disposal	P501 Dispose of contents by using it in accordance with this label. Dispose of the container via AgRecovery after triple rinsing (use the rinsate for spraying).

### 3: Composition/ Information on Ingredients

Ingredient	CAS No	Content (% w/v)
Flamprop-M-isopropyl (active ingredient)	63782-90-1	20
Solvent naphtha	64742-94-5	> 60
Other ingredients	Proprietary	Remainder

### 4: First Aid Measures

If medical advice is needed, have product container or label at hand. For advice call the National Poisons Centre or a Doctor

<b>Ingestion:</b>	IF SWALLOWED: Immediately call a POISON CENTRE/doctor
<b>Skin Contact:</b>	Wash with plenty of soap and water. Seek medical advice if irritation occurs.
<b>Eye Contact:</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do so. Continue rinsing. Seek medical advice if irritation persists.
<b>Inhalation:</b>	Remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical advice if feeling unwell.
<b>Workplace Facilities:</b>	Hand wash facility. Eye wash facility
<b>Advice to Doctor:</b>	No specific antidote. Treat symptomatically
<b>National Poison Centre</b>	0800 POISON (0800 764 766) (24 hours)

Symptoms of Exposure which could occur if this material is not handled in accordance with instructions:

<b>Ingestion:</b>	May be fatal if swallowed and enters airways
<b>Skin Contact:</b>	No data available
<b>Eye Contact:</b>	No data available
<b>Inhalation:</b>	No data available

### 5: Fire-Fighting Measures

<b>Fire/Explosion Hazard</b>	Non-Flammable but will be combustible in a fire
<b>HAZCHEM Code</b>	3Z
<b>ERP Guide No</b>	47
<b>Extinguishing Media</b>	Water spray, foam, dry chemical or CO2. Avoid water jet.
<b>Fire Fighting Instructions</b>	During a fire, toxic fumes may be emitted. Wear self-contained breathing apparatus. Contain runoff.
<b>Specific Hazards Arising from Fire</b>	No data available

### 6: Accidental Release Measures

<b>Personal Precautions</b>	Caution: Floors may be slippery if wet. Leave and/or avoid entering confined spaces. Wear personal protective clothing and equipment as described in section 8. Respiratory protection (with organic vapour cartridge) required for any spill other than minor. Exclude non-essential people from the area.
<b>Environmental Precautions</b>	Prevent further spillage or leakage. Prevent material from entering drains, waterways, etc.
<b>Clean Up</b>	Absorb spillage with inert material such as spill kit, sand or cat litter. Collect and place in a sealable container for disposal. Wash down affected area with water and detergent. Absorb and collect washings for disposal. Dispose of safely to a suitable landfill.

### 7: Handling and Storage

<b>Storage:</b>	Keep out of reach of children. Store in the original tightly closed container in a secure area.
<b>Handling and Use:</b>	Keep out of reach of children. Refer to Prevention statements in section 2 above. Keep people and animals away from the area while spraying and for the duration of the REI.
<b>REI</b>	Until spray has dried

### 8: Exposure Controls / Personal Protection

<b>Tolerable Exposure Limit</b>	None established
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<b>Workplace Exposure Standards</b>	None established
<b>Engineering Controls</b>	Select spray application equipment to minimize exposure to operator and bystanders
<b>Personal Protection:</b>	
<b>Eye</b>	Safety glasses/goggles when mixing or applying
<b>Skin</b>	Cotton overalls snugly fitting at the neck, wrist and ankle, boots and chemical resistant gloves (barrier multilayer, nitrile, neoprene, butyl) when mixing and applying
<b>Respiratory</b>	Not required where vapour or spray mist is not inhaled. Otherwise, respirator (organic vapour and particulate matter) is required.

Clean protective equipment after use

### 9: Physical and Chemical Properties

<b>Appearance</b>	Amber Liquid
<b>Odour</b>	Solvent like
<b>Odour Threshold</b>	Does not apply
<b>pH</b>	Does not apply
<b>Melting Point/Freezing Point</b>	Does not apply
<b>Boiling Point</b>	Does not apply
<b>Flash Point</b>	>93°C
<b>Flammability</b>	Not flammable but will be combustible in a fire
<b>Upper/Lower Flammability Limits</b>	Does not apply
<b>Vapour Pressure</b>	Does not apply
<b>Vapour Density</b>	>1 (heavier than air)
<b>Relative Density</b>	1.02 – 1.05 g/mL (approx.)
<b>Solubility in Water</b>	Emulsifiable
<b>Partition Coefficient: n-octanol/water</b>	See section 12
<b>Auto ignition Temperature</b>	Does not apply
<b>Decomposition Temperature</b>	Does not apply
<b>Kinematic Viscosity</b>	Does not apply
<b>Particle characteristics</b>	Does not apply

### 10: Stability and Reactivity

<b>Stability</b>	Stable under normal conditions
<b>Hazardous Reactions</b>	None Expected
<b>Incompatibility</b>	Strong acids, alkalis, and oxidizing agents
<b>Hazardous Decomposition Products</b>	None Known

### 11: Toxicological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

<b>Acute Oral Toxicity</b>	LD50 > 2000 mg/kg
<b>Acute Dermal Toxicity</b>	LD50 > 5000 mg/kg
<b>Acute Inhalation Toxicity</b>	LD50 > 5 mg/L
<b>Skin corrosion/irritation</b>	Irritant
<b>Serious eye damage/Eye irritation</b>	Irritant
<b>Respiratory or skin sensitisation</b>	Information not available
<b>Germ cell mutagenicity</b>	Information not available
<b>Carcinogenicity</b>	Information not available
<b>Reproductive Toxicity</b>	Information not available
<b>Specific Organ Toxicity – Single exposure</b>	Information not available

<b>Specific Organ Toxicity – Repeated exposure</b>	Information not available
<b>Aspiration hazard</b>	Information not available

### 12: Ecological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

The following information is presented in respect of the active ingredient:

<b>Ecotoxicity</b>	<ul style="list-style-type: none"> <li>Acute Oral LD50 (Bird) 2000 mg/kg</li> <li>LC50 (96 hr) (Rainbow trout) 3.3 mg/l</li> <li>LC50 (24 hr) (Daphnia) 18.6 mg/l</li> <li>EC50 (96 hr) (Algae) 6.8 mg/l</li> <li>Non toxic to bees</li> </ul>
<b>Persistence/degradability</b>	Biodegradable. DT50 (soil) 55 days (typical)
<b>Bioaccumulative Potential</b>	Octanol-water partition coefficient <span style="float: right;">LogP = 3.69 (high)</span>
<b>Soil Mobility</b>	Soil organic carbon water partitioning coefficient <span style="float: right;">Koc = 750 (slightly mobile)</span>
<b>Environmental Exposure Limit:</b>	None established

### 13: Disposal Considerations

<b>Product</b>	Dispose of product by using it in accordance with the label. Waste product should be disposed of to a suitable landfill. For disposal of large quantities contact Orion AgriScience Ltd.
<b>Container</b>	Dispose of to a suitable landfill or via AgRecovery. Do not burn. Do not use packaging for any other purpose.

### 14: Transport Information

<b>Dangerous Goods</b>	
<b>UN Number</b>	3082
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLAMPROP-M-ISOPROPYL 20%)
<b>Class</b>	9
<b>Subsidiary Class</b>	None
<b>Packing Group</b>	III
<b>Additional Information</b>	MARINE POLLUTANT
<b>MTQ (Non-Commercial)</b>	1000 litres
<b>Passenger Service Vehicle</b>	No restriction

### 15 Regulatory Information

<b>EPA Approval No</b>	HSR100061 / HSR100062
<b>ACVM Registration No</b>	P8081
<b>Qualified Person</b>	Not required
<b>Certified Handler</b>	Not required
<b>Workplace Only</b>	No
<b>Tracking</b>	Not required
<b>Record Keeping</b>	Not required
<b>Site Requirements under EPA Notice and HSWHS Regs:</b>	<ul style="list-style-type: none"> <li>A hazardous substance location compliance certificate is not required</li> <li>A hazardous area is not required</li> <li>Separation distances for class 3 and class 6 substances to protected places and public places is not applicable</li> <li>Fire extinguishers are not required</li> </ul>

- Signage is required for more than 1000 litres
- An emergency response plan is required for more than 1000 litres
- Secondary containment is required for more than 1000 litres
- Segregation from incompatible substances is not required

### Additional Requirements

Refer to NZS 8409:2004 'Management of Agrichemicals', and relevant local and regional council plans

## 16: Other Information

SDS review date	12 March 2025
Glossary	
ADE	Acceptable Daily Exposure – A daily dose, received via any route, below which no adverse effects are expected over a lifetime of exposure
ACVM	Agricultural Compounds and Veterinary Medicines group of the Ministry of Primary Industries
Cat.	GHS category
Ceiling	A concentration that should not be exceeded at any time during any part of the working day
Certified Handler	A qualification issued by a Compliance Certifier to handle and use particularly toxic substances (6.1A and 6.1B)
DT50	Time (days) for 50% reduction in concentration
EC50	Concentration required to produce an effect in 50% of organisms
Environmental Exposure Limit	Maximum concentration limit of a substance in an environmental medium, e.g., water, soil.
EPA Notice	Hazardous Property Controls Notice 2017
ERP Guide	Dangerous Goods – Initial Emergency Response Guide SNZ HB 76:2008
GHS	Globally harmonized system of classification and labelling of chemicals
Hazardous Substance Location	For locations storing hazard substances of certain classes above threshold quantities
Compliance Certificate	
Hazardous Area	A designated area designed for the presence of flammable substances - Refer AS/NZS 60079.10.1:2009
HAZCHEM Code	Emergency action code for emergency services
HSWHS Regs	Health and Safety at Work (Hazardous Substances) Regulations 2017
LC50	Concentration that will kill 50% of organisms
LD50	Dose that will kill 50% of organisms
MTQ	Maximum Transport Quantity. The maximum amount of dangerous goods that can be transported by road by the user
Notification	Advance notice given to neighbours and other affected parties, of details of proposed application, and other details as described
Octanol-Water Partition Coefficient	The partition coefficient of a substance between n-octanol and water, used as the Logarithm base 10 form, as an indicator that a substance may bioaccumulate
PDE	Permitted Daily Exposure - A daily dose below which no adverse effects are expected over a lifetime of exposure
Protected Place	Residential properties, schools, hospitals, kindys, factories, shops, warehouses, etc., and other places where people assemble
Public Place	A place frequented by the public, including roads (does not include private property)
Qualified Person	A requirement for the loader, contractor or person applying the product to hold a qualification such as a GROWSAFE Certificate, Unit Standard 21563, etc.
Record Keeping	Includes a spray diary or other record of application
REI	Restricted Entry Interval – The length of time after application before entry into the treated area is permitted without the use of protective equipment. For indoor environments, this time period commences once ventilation after treatment begins.

<b>Segregation</b>	Certain classes of substances must not be in contact with, and must be stored separately from, certain other classes as specified in HSWHS Regs
<b>Separation Distances</b>	The distances specified in Part 11 and Part 13 of HSWHS Regs between storage and/or use of hazardous substances and protected places and/or public places
<b>Signage</b>	Positioned at entrances to commercial premises providing information on the hazardous substances present
<b>Soil Adsorption Coefficient (Kd)</b>	The ratio of the concentrations of a substance adsorbed onto a solid sorbent to that dissolved in a liquid phase. The higher the value the less mobile the chemical is in soil
<b>Soil Organic Carbon-Water Partitioning Coefficient (Koc)</b>	The ratio of the mass of a chemical that is adsorbed in the soil per unit mass of organic carbon in the soil. The higher the value the less mobile the chemical is in soil
<b>STEL</b>	Short term exposure level – 15 minute time weighted average
<b>Tolerable Exposure Limit</b>	Maximum concentration limit of a substance above which persons must not be exposed
<b>Tracking</b>	For some particularly hazardous substances, a record must be kept of the transport, storage, sale and use of the product
<b>TWA</b>	Time weighted average calculated over an 8 hour working day
<b>Workplace Exposure Standard</b>	An occupational health standard limiting concentrations of specified substances to which persons are exposed
<b>Workplace Only</b>	A product that is restricted to a workplace only and under the supervision of a certified handler

#### Please Note

Users must ensure that the most up to date version of this safety data sheet is used.

This Safety Data Sheet summarises information on this product, and how to safely handle and use the product. Each user should familiarise themselves with the product label and Safety Data Sheet, and consider the information in the context of how the product will be handled and used, including in conjunction with other products. Orion AgriScience Ltd assumes no responsibility for the accuracy, completeness or suitability of this information. The user is responsible for determining the suitability and accuracy of this information for their particular purposes.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.