

## Triflow 480

### Section 1: SUBSTANCE IDENTIFICATION AND SUPPLIER

<b>Product Name:</b>	<b>Triflow 480</b>
<b>Product Code:</b>	7931090 (20 Litres) 7931096 (1000 Litres)
<b>Recommended Use:</b>	Selective pre-emergence soil incorporated herbicide for the control of certain annual grasses and broadleaf weeds in vegetable crops, Lucerne and peas.
<b>Restrictions of Use:</b>	Refer to Section 15
<b>Company Identification:</b>	Ravensdown Limited
<b>Address:</b>	292 Main South Road, Hornby, Christchurch, 8042 PO Box 1049, Christchurch 8011
<b>Customer Centre:</b>	0800 100 123
<b>National Poisons Information Centre:</b>	0800 POISON (0800 764 766)
<b>Emergency Phone Number:</b>	0800 CHEMCALL (0800 243 622) (24hr) (Emergencies Only)
<b>Transport Emergency Phone Number:</b>	111 - tell operator what service is needed: Fire, Ambulance or Police
<b>Date of SDS Preparation</b>	9 May 2024 v2

### Section 2: HAZARD IDENTIFICATION

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

<b>EPA Approval No:</b>	HSR000576
<b>Pictograms:</b>	
<b>Signal Word:</b>	<b>DANGER</b>

GHS Classification and Category	Hazard Code	Hazard Statement
Acute oral toxicity Cat. 4	H302	Harmful if swallowed.
Eye irritation Cat. 2	H319	Causes serious eye irritation.
Skin sensitisation Cat. 1	H317	May cause an allergic skin reaction.
Specific target organ toxicity – repeated exposure Cat. 1	H372	Causes damage to organs through prolonged or repeated exposure.
Hazardous to the aquatic environment acute Cat. 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment chronic Cat. 1	H410	Very toxic to aquatic life with long lasting effects.
Hazardous to soil organisms.	H421	Hazardous to soil organisms.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.
P260	Do not breathe fume, vapours or spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.

P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.

<b>Storage Code</b>	<b>Storage Statement</b>
None allocated	

<b>Disposal Code</b>	<b>Disposal Statement</b>
P501	Dispose of according to Local Regulations or Authorities

### Section 3: COMPOSITION INFORMATION

INGREDIENT	CAS No.	CONTENT
Trifluralin	1582-09-8	48%
Aromatic Hydrocarbon Solvent	64742-94-5	40 – 50%
Emulsifier	26264-06-2	0 – 10%

### Section 4: FIRST AID MEASURES

<b>Routes of Exposure:</b>	
<b>If in eyes:</b>	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.
<b>If on skin:</b>	Take off contaminated clothing. Wash affected area thoroughly with soap and water. If skin irritation or rash occurs: Get medical advice/ attention.
<b>If ingested:</b>	Rinse mouth. Never give anything by mouth to an unconscious person. If swallowed DO NOT induce vomiting. For advice, contact the National Poisons Centre on 0800 POISON (0800 764 766). Seek medical assistance immediately.
<b>If inhaled:</b>	Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Symptoms:</b>	Please refer to Section 11 for full details and symptoms.
<b>Eyes:</b>	Causes serious eye irritation.
<b>Skin:</b>	May cause an allergic skin reaction.
<b>Ingested:</b>	Harmful if swallowed.
<b>Inhaled:</b>	Not applicable
<b>Chronic:</b>	Causes damage to organs through prolonged or repeated exposure.
<b>Notes to Doctor:</b>	Treat symptomatically. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.

### Section 5: FIRE FIGHTING MEASURES

<b>Hazard Type</b>	Non Flammable
<b>Hazards from combustion products</b>	If involved in a fire may evolve fluorinated hydrocarbons, oxides of nitrogen and carbon.
<b>Suitable Extinguishing media</b>	Water fog, foam, carbon dioxide or dry chemical.
<b>Precautions for firefighters and special protective clothing</b>	Full protective clothing and self-contained breathing apparatus.
<b>HAZCHEM CODE</b>	<b>3Z</b>

### Section 6: ACCIDENTIAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:**

Wear appropriate protective clothing as detailed in Section 8. Exclude non-essential people from the area.

**Environmental precautions:**

Prevent from entering drains, waterways or sewers. If spill does enter waterways contact local authority.

**Methods and material for containment and cleaning up:**

Contain spill and absorb with inert material such as soil, sand or absorbent granules and place in a sealable waste container.

Dispose of according to Section 13.

## Section 7: HANDLING AND STORAGE

<b>Handling:</b>	<p>Read carefully and follow all instructions.</p> <p>Avoid contact with skin, eyes and inhalation of spray mist.</p> <p>Do not breathe fume, vapours or spray.</p> <p>Wash hands thoroughly after handling.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Contaminated work clothing should not be allowed out of the workplace.</p> <p>Avoid release to the environment.</p> <p>Wear protective clothing as detailed in Section 8.</p> <p>Record Keeping: Records of use in accordance with NZS 8409 Management of Agrichemicals must be kept.</p>
<b>Storage:</b>	<p>Keep out of reach of children.</p> <p>Store away from incompatible materials listed in Section 10.</p> <p>Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertiliser and seed.</p> <p>Store in accordance with NZS 8409 Management of Agrichemicals. This product is subject to signage and secondary containment when stored in quantities of 100litres or more, either alone or in aggregate with substances of the same hazard classification. More than 100litres requires emergency response plans. For full details refer to NZS 8409 Management of Agrichemicals and HSNO Regulations (Emergency Management and Identification Regulations).</p>

## Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

### WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA ppm mg/m <sup>3</sup>	STEL ppm mg/m <sup>3</sup>
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No ingredients have exposure limits

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2023 14TH EDITION.

<b>Engineering Controls:</b>	Handle in well ventilated area. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. Avoid inhalation of spray mist.
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#### Personal Protection Equipment:



<b>Eyes:</b>	When opening the container, preparing spray and when contact with concentrate or solution is likely, wear safety goggles.
<b>Skin/Hands:</b>	When opening the container, preparing spray and when contact with concentrate or solution is likely, wear chemically resistant gloves, cotton overalls buttoned to the neck and wrist, and boots.
<b>Respiratory:</b>	Wear respiratory protection in areas of poor ventilation.
<b>General:</b>	Do not eat, drink or smoke while using this product. Remove protective clothing and wash hands and face before meals and after work. Wash protective clothing daily after work.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Liquid
<b>Colour</b>	Clear bright orange
<b>Odour</b>	Solvent Odour
<b>Odour Threshold</b>	Not available
<b>pH</b>	Not available
<b>Boiling Point</b>	Not available
<b>Melting Point</b>	Not available
<b>Freezing Point</b>	Not available
<b>Flash Point</b>	>95°C
<b>Flammability</b>	Non Flammable

<b>Upper and Lower Explosive Limits</b>	Not available
<b>Vapour Pressure</b>	Not available
<b>Vapour Density</b>	Not available
<b>Specific Gravity</b>	1.09
<b>Water Solubility</b>	Emulsifies in water
<b>Partition Coefficient:</b>	Not available
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	Not available
<b>Kinematic Viscosity</b>	Not available
<b>Particle Characteristics</b>	Not available
<b>Other information</b>	(EC) Emulsifiable Concentrate

## Section 10: STABILITY AND REACTIVITY

<b>Stability of Substance</b>	When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture.
<b>Possibility of hazardous reactions</b>	Not available
<b>Conditions to Avoid</b>	Avoid exposure to sunlight.
<b>Incompatible Materials</b>	Avoid contact with oxidising agents – violent reactions are possible
<b>Hazardous Decomposition Products</b>	Contact with water may cause slow decomposition. Material undergoes photodecomposition.

## Section 11: TOXICOLOGICAL INFORMATION

### Acute Effects:

<b>Swallowed</b>	Harmful if swallowed. Ingestion of relatively large amounts may cause injury mainly due to the solvent. If aspirated into the lung may cause chemical pneumonitis or other lung damage.
<b>Dermal</b>	Not triggered.
<b>Inhalation</b>	Not triggered, however solvent content in the concentrate may cause irritation of the eyes and respiratory tract. When applying this product avoid inhalation of spray mist.
<b>Eye</b>	Causes serious eye irritation.
<b>Skin</b>	May cause an allergic skin irritation. The concentrate may cause defatting of the skin, dermatitis and skin irritation on prolonged contact. May cause sensitisation from prolonged contact.

### Chronic Effects:

<b>Carcinogenicity</b>	Not triggered. Trifluralin is not considered a carcinogen. The impurity di-n-propylnitrosamine found in crude trifluralin is a known carcinogen. The final product specification is set in accordance with current FAO specification of a maximum 0.5ppm di-n-propylnitrosamine. In animal studies, material containing 1ppm or less has not shown tumour formation. Generally the levels contained fall below detection level 0.2ppm.
<b>Reproductive Toxicity</b>	Not triggered.
<b>Germ Cell Mutagenicity</b>	Not triggered.
<b>Aspiration</b>	Not triggered.
<b>STOT/SE</b>	Not triggered.
<b>STOT/RE</b>	Causes damage to organs through prolonged or repeated exposure.
<b>Chronic Effects</b>	No data available

## Section 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects.

Hazardous to soil organisms.

### Product:

<b>Persistence and degradability/Mobility</b>	Approximately 90% of trifluralin degrades in 6-12months. Requires incorporation into the soil as product degrades in light. Potential for mobility is low binding tightly to soil potential for leaching is low.
<b>Bioaccumulation</b>	No data available.
<b>Other adverse effects</b>	Avoid unintended release into streams and waterways.

### Ecotoxicity:

#### **Acute Toxicity (fish)** (trifluralin)

LC<sub>50</sub> (bluegill sunfish) (96hr) 0.089mg/L

LC<sub>50</sub> (rainbow trout) (96hr) 0.088mg/L

#### **Acute Toxicity (daphnia)** (trifluralin)

LC<sub>50</sub> (48hr) 0.245mg/L

Very ecotoxic in the aquatic environment

Acute Toxicity (birds)

LD<sub>50</sub> (bobtail quail) >2000mg/kg

Non-toxic to birds

### Section 13: DISPOSAL INFORMATION

Disposal Method:	Triple rinse container and add rinsate to the spray tank. Dispose of product only by using in accordance with label directions, or through Agrecovery Chemical Recovery Service or alternative approved programs.
Container Disposal:	 Triple rinsed containers containing the Agrecovery logo on the label and that are free of all residues and have an intact legible label may be taken to an Agrecovery collection site for free recycling. Otherwise crush and bury in an approved landfill. Do not burn. Do not use container for any other purpose.
Precautions or methods to avoid:	Do not allow product or empty container to contaminate any waterway.

### Section 14: TRANSPORT INFORMATION

This product is classified as a Dangerous Good for transport in NZ; NZS 5433:2020



#### Road, Rail, Sea and Air Transport

UN No	3082
Class - Primary	9
Packing Group	III
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Trifluralin 48%)
Marine Pollutant	Yes
Hazchem Code	3Z
Special Provisions	If the product's individual container is below 5L it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

### Section 15: REGULATORY INFORMATION

This substance is classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

EPA Approval Code: HSR000576

HSW (HS) Regulations 2017	Trigger Quantity
Signage Trigger Quantities (Schedule 3)	100L
Emergency Response Plan (Schedule 5)	100L
Secondary Containment (Schedule 5)	100L
Tracking (Schedule 26)	Not required
Certified Handlers	Not required
Location Certificate	Not required
<b>HSNO Additional Controls (Restrictions of use)</b>	
77A -	The substance must not be applied onto or into water.
<b>ACVM Act and Regulations</b>	
See <a href="http://www.foodsafety.govt.nz">www.foodsafety.govt.nz</a> for registration conditions <b>P7201</b>	

### Section 16: OTHER INFORMATION

#### Glossary

EC <sub>50</sub>	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC <sub>50</sub>	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD <sub>50</sub>	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.

TLV Threshold Limit Value-an exposure limit set by responsible authority.  
UEL Upper Explosive Level  
WES Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2023 14th edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2020
5. HSW (Hazardous Substances) Regulations 2017

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Please contact Ravensdown, if further information is required.

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