Section 1: Identification: Product identifier and chemical identity

Product Identifier:	**CHOICE SHOTUP HERBICIDE**
Other Means of Identification:	Agricultural Herbicide. Grow Choice product code number: 800 AVPMA registered number: 88924
Recommended Use:	For the control of climbing buckwheat and other broadleaf weeds in winter cereals and fallow, and control of lantana and woody weeds in non-crop situations as per the Directions For Use
Details of manufacturer or importer:	**Grow Choice Pty Ltd** ABN 36 161 264 884
Address:	**113 Fitzroy Street** **TAMWORTH NSW 2340** **AUSTRALIA**
Website:	**www.growchoice.com.au**
Phone Number & Email:	**(02) 6766 3979 - admin@growchoice.com.au**
Emergency Phone Number:	**In Case Of Emergency Dial 000**
Poisons Information Centre:	**Phone: 13 11 26 and speak to a Poisons Information Specialist.** **Fax: +61 2 9845 3597 http://www.chw.edu.au/poisons/contact.htm**

Section 2: Hazards identification

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the substance and mixture:	Flammable liquids - Category 4 Serious eye damage/eye irritation - Category 1 Carcinogenicity - Category 2 Specific target organ toxicity - single exposure - Category 3 Aspiration hazard - Category 1 Acute aquatic toxicity - Category 1 Chronic aquatic toxicity - Category 1
Signal word:	Danger
Hazard pictograms:	
Hazard statements:	Combustible liquid. May be fatal if swallowed and enters airways. Causes serious eye damage. May cause drowsiness or dizziness. Suspected of causing cancer. Very toxic to aquatic life with long lasting effects.
Precautionary Statements (Prevention):	Obtain special instructions before use. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapour / spray. Avoid release to the environment. Wear protective gloves/ eye protection/ face protection. Use personal protective equipment as required.
Precautionary Statements (Response):	IF SWALLOWED: Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Other hazards:	No data available.
Poisons Schedule (SUSMP):	S6 Poison.

Section 3: Composition and information on ingredients

Components	CAS No	Proportion
Fluroxypyr 1-methylheptyl ester	81406-37-3	20.23%
Aminopyralid Triisopropanolamine Salt	566191-89-7	1.93%
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	> 40.0 - < 50.0 %
Dipropylene glycol monomethyl ether	34590-94-8	> 10.0 - < 20.0 %
Poly(oxy-1,2-ethanediyl), .alpha.- sulfo-.omega.-(dodecyloxy) ammonium salt	32612-48-9	>= 3.0 - < 10.0 %
Naphthalene	91-20-3	>= 3.0 - < 10.0 %
1,2,4-Trimethylbenzene	95-63-6	>= 1.0 - < 3.0 %
Hexylene glycol	107-41-5	>= 1.0 - < 3.0 %

Section 4: First aid measures

In Case Of Emergency Dial 000 and/or Poisons Information Centre: Phone: 13 11 26 and speak to a Poisons Information Specialist. Take this SDS and or DFU/Label with you or when calling the Poisons Information Centre.

General Advice:

If poisoning occurs, contact a doctor or the Poisons Information Centre (Australia) on 13 11 26. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled:
Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control centre or doctor for treatment advice.

Skin Contact:
Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

Eye Contact:
Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control centre or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available.

Ingestion:
Immediately call a poison control centre or doctor. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of immediate medical attention and special treatment needed:
Notes to physician:

If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control centre or doctor or going for treatment.

Section 5: Fire fighting measures

Suitable Extinguishing Equipment:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.
Specific hazards arising from the chemical:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Hydrogen chloride. Fluorine.
Unusual fire and explosion hazards:	Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. When product is stored in closed containers, a flammable atmosphere can develop. Dense smoke is produced when product burns.
Advice for Fire Fighters **Fire fighting procedures:**	Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.
Special Protective Equipment and Precautions for Fire Fighters:	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.
Hazchem Code:	●2X

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Evacuate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental precautions:	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.
Methods and materials for containment and cleaning up:	Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Sand. Sweep up. Collect in suitable and properly labelled containers. Large spills: Contact Grow Choice for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Section 7: Handling and storage

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations

Precautions for safe handling:	Keep away from heat, sparks and flame. Keep out of reach of children. Do not get in eyes. Do not swallow. Avoid breathing vapour or mist. Avoid contact with skin and clothing. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Conditions for safe storage, including any incompatibilities:	Store in a dry place. Store in original container. Keep container tightly closed. Do not store near food, foodstuffs, drugs or potable water supplies.

Section 8: Exposure controls and personal protection

Control Parameters:	Exposure limits are listed below, if they exist.

Components	**Regulation**	**Type of listing**	**Value/Notation**
Fluroxypyr 1-methylheptyl ester	Dow IHG	TWA	10 mg/m3
Solvent naphtha (petroleum), heavy aromatic	Dow IHG	TWA	200 mg/m3, total hydrocarbon vapour
	Dow IHG	STEL	100 mg/m3
Dipropylene glycol monomethyl ether	ACGIH	TWA	100 ppm SKIN
	ACGIH	STEL	150 ppm SKIN
	Dow IHG	TWA	10 ppm SKIN
	Dow IHG	STEL	30 ppm SKIN
	AU OEL	TWA	308 mg/m3 50 ppm SKIN
Naphthalene	ACGIH	TWA	10 ppm SKIN
	Dow IHG	TWA	10 ppm SKIN
	Dow IHG	STEL	15 ppm SKIN
	AU OEL	TWA	52 mg/m3 10 ppm
	AU OEL	STEL	79 mg/m3 15 ppm
1,2,4-Trimethylbenzene	ACGIH	TWA	25 ppm
	AU OEL	TWA	123 mg/m3 25 ppm
Hexylene glycol	ACGIH	TWA Vapour and aerosol	25 ppm
	ACGIH	STEL Vapour and aerosol	50 ppm
	ACGIH	STEL aerosol only	10 mg/m3
	Dow IHG	STEL Aerosol	10 mg/m3
	Dow IHG	TLV-C Vapour	25 ppm
	AU OEL	TWA	25 ppm
	AU OEL	Peak limit	121 mg/m3 25 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Biological occupational exposure limits

Components	**CAS**	**Permissible concentration**
Dipropylene glycol monomethyl ether	34590-94-8	100 mg/g

Section 8: Exposure controls and personal protection (cont…)

Appropriate engineering controls:	Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.
Individual protection measures, such as Personal Protective Equipment (PPE):	Eye/face protection: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator. Skin protection Hand protection: Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Viton. Styrene/butadiene rubber. Examples of acceptable glove barrier materials include: Butyl rubber. Neoprene. Chlorinated polyethylene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to AS/NZS 2161.10) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to AS/NZS 2161.10) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier
Other protection:	Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
Respiratory protection:	Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapour cartridge with a particulate pre-filter.
Other Information:	Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including: AS/NZS 1336: Eye and face protection – Guidelines. AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications. AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment. AS/NZS 2161: Occupational protective gloves. AS/NZS 2210: Occupational protective footwear. AS/NZS 4501: Occupational protective clothing set

Section 9: Physical and chemical properties

Appearance:	Yellow Liquid	**Liquid Density:**	0.993 g/cm3 at 20°C *Digital density meter*
Odour:	Waxy	**Relative Vapour Density (air=1):**	No test data available
pH:	4.5 - 7.5 pH Electrode	**Relative Density (water=1):**	0.993 at 20°C *Digital Density Meter (Oscillating Coil)*
Melting Point/Range:	Not applicable	**Boiling Point/Range:**	No test data available
Flammability Limits:	No data available	**Decomposition Point:**	Not available
Flash Point:	closed cup 65.6°C *Closed Cup*	**Freezing Point**	No test data available
Auto-Ignition Temperature:	No test data available	**Vapour Pressure:**	No test data available
Viscosity:	Not available	**Evaporation Rate:**	No test data available
Lower Explosion Limit:	No test data available	**Upper Explosion Limit:**	No test data available
Partitioning coefficient n-octanol/water (log Pow):	No data available	**Solubility in water:**	Emulsifiable
Auto-ignition temperature	No test data available	**Decomposition temperature:**	No test data available
Kinematic Viscosity:	5.77 mm2/s at 40°C	**Explosive properties:**	Not explosive
Oxidizing properties:	No data available	**Molecular weight:**	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification

Section 10: Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Stable under recommended storage conditions. See Storage, Section 7.
Possibility of hazardous reactions:	Polymerization will not occur.
Conditions to avoid:	Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.
Incompatible materials:	Avoid contact with: Oxidizers.
Hazardous decomposition products:	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Nitrogen oxides. Toxic gases are released during decomposition. Decomposition products can include trace amounts of: Hydrogen chloride.

Section 11: Toxicological information

Acute Toxicity - Oral	Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. As product: LD50, Rat, female, 5,000 mg/kg Based on information for component(s): Naphthalene. Lethal Dose, 5 - 15 ml
Acute Toxicity – Dermal	Prolonged skin contact is unlikely to result in absorption of harmful amounts. As product: LD50, Rat, male and female, > 5,000 mg/kg. No deaths occurred at this concentration.

Section 11: Toxicological information (cont.)

Acute Toxicity – Inhalation	No adverse effects are anticipated from single exposure to mist. Symptoms of excessive exposure may be anaesthetic or narcotic effects; dizziness and drowsiness may be observed. As product: LC50, Rat, male and female, 4 Hour, dust/mist, > 5.26 mg/l. No deaths occurred at this concentration.
Skin Contact:	Brief contact may cause slight skin irritation with local redness..
Eye Contact:	May cause severe eye irritation. May cause corneal injury. May cause permanent impairment of vision, even blindness. Vapour may cause eye irritation experienced as mild discomfort and redness.
Respiratory or skin sensitisation:	Did not cause allergic skin reactions when tested in guinea pigs. For respiratory sensitization: No relevant data found.
Chronic Effects:	
Carcinogenicity:	Contains naphthalene which has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative. For similar active ingredient(s). Fluroxypyr-meptyl. Aminopyralid. Did not cause cancer in laboratory animals.
Teratogenicity:	For the active ingredient(s): Fluroxypyr 1-methylheptyl ester. Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. For the major component(s): Did not cause birth defects or any other foetal effects in laboratory animals.
Mutagenicity:	For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative. For the minor component(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases.
Reproductive Toxicity:	For the active ingredient(s): In animal studies, did not interfere with reproduction. For the minor component(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Specific Target Organ Toxicity (STOT) - single exposure:	May cause drowsiness or dizziness. Route of Exposure: Inhalation
Specific Target Organ Toxicity (STOT) - repeated exposure:	For similar active ingredient(s). Aminopyralid. In animals, effects have been reported on the following organs: Gastrointestinal tract. Excessive exposure to solvent(s) may cause respiratory irritation and central nervous system depression. Excessive exposure may cause haemolysis, thereby impairing the blood's ability to transport oxygen. Symptoms of excessive exposure may be anaesthetic or narcotic effects; dizziness and drowsiness may be observed. Ingestion of naphthalene by humans has caused haemolytic anaemia. Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapour or dust. For the minor component(s): In animals, effects have been reported on the following organs: Kidney. Respiratory tract.
Aspiration hazard:	May be fatal if swallowed and enters airways.

Section 12: Ecological information

ECOTOXICITY

Fluroxypyr 1-methylheptyl ester:

Acute toxicity to fish:	Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, > 0.225 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates:	EC50, Daphnia magna (Water flea), semi-static test, 48 Hour, > 0.183 mg/l, OECD Test Guideline 202 or Equivalent Toxicity to aquatic species occurs at concentrations above material's water solubility.
Acute toxicity to algae/aquatic plants:	ErC50, diatom Navicula sp., static test, 72 Hour, 0.24 mg/l, OECD Test Guideline 201 or Equivalent EbC50, alga Scenedesmus sp., 72 Hour, > 0.47 mg/l ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1.410 mg/l ErC50, Myriophyllum spicatum, 14 d, 0.075 mg/l NOEC, Myriophyllum spicatum, 14 d, 0.031 mg/l
Chronic toxicity to fish:	NOEC, Rainbow trout (Oncorhynchus mykiss), 0.32 mg/l
Toxicity to Above Ground Organisms:	Material is practically non-toxic to birds on an acute basis (LD50 > 2,000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 > 5,000 ppm). Oral LD50, Colinus virginianus (Bobwhite quail), 5 d, > 2,000 mg/kg bodyweight. Dietary LC50, Colinus virginianus (Bobwhite quail), > 5,000 mg/kg diet. Oral LD50, Apis mellifera (bees), 48 Hour, > 100 micrograms/bee Contact LD50, Apis mellifera (bees), 48 Hour, > 100 micrograms/bee
Toxicity to soil-dwelling organisms:	LC50, Eisenia fetida (earthworms), > 1,000 mg/kg

Aminopyralid Triisopropanolamine Salt:

Acute toxicity to fish:	For similar material(s): Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). For similar material(s): LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 360 mg/l
Acute toxicity to aquatic invertebrates:	For similar material(s): EC50, Daphnia magna (Water flea), 48 Hour, > 460 mg/l
Acute toxicity to algae/aquatic plants:	For similar material(s): Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). For similar material(s): ErC50, Myriophyllum spicatum, 14 d, 0.363 mg/l For similar material(s): NOEC, Myriophyllum spicatum, 14 d, 0.0639 mg/l For similar material(s): ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l
Toxicity to Above Ground Organisms:	Based on information for a similar material: Material is practically non-toxic to birds on an acute basis (LD50 > 2,000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 > 5,000 ppm).

Solvent naphtha (petroleum), heavy aromatic:

Acute toxicity to fish:	Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 2 - 5 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates:	EL50, Daphnia magna (Water flea), static test, 48 Hour, 3 - 10 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants:	EL50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, 11 mg/l, OECD Test Guideline 201 or Equivalent
Toxicity to Above Ground Organisms:	Based on information for a similar material: Dietary LC50, Colinus virginianus (Bobwhite quail), 5 d, > 6,500 ppm Based on information for a similar material: Oral LD50, Colinus virginianus (Bobwhite quail), > 2,250 mg/kg
Dipropylene glycol monomethyl ether:	
Acute toxicity to fish:	Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, Poecilia reticulata (guppy), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates:	LC50, Daphnia magna (Water flea), static test, 48 Hour, 1,919 mg/l, OECD Test Guideline 202 or Equivalent LC50, Crangon crangon (shrimp), semi-static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent LC50, copepod Acartia tonsa, static test, 48 Hour, 2,070 mg/l, ISO TC147/SC5/WG2
Acute toxicity to algae/aquatic plants:	ErC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Biomass, > 969 mg/l, OECD Test Guideline 201 or Equivalent
Toxicity to bacteria:	EC10, Pseudomonas putida, 18 Hour, 4,168 mg/l
Chronic toxicity to aquatic invertebrates:	NOEC, Daphnia magna (Water flea), flow-through test, 22 d, > 0.5 mg/l LOEC, Daphnia magna (Water flea), flow-through test, 22 d, > 0.5 mg/l MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), flow-through test, 22 d, > 0.5 mg/l
Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt:	
Acute toxicity to fish:	No relevant information found.
Naphthalene:	
Acute toxicity to fish:	Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested). LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 0.11 mg/l
Acute toxicity to aquatic invertebrates:	EC50, Daphnia magna (Water flea), static test, 48 Hour, 1.6 - 24.1 mg/l
Acute toxicity to algae/aquatic plants:	ErC50, Skeletonema costatum (marine diatom), Growth rate inhibition, 72 Hour, 0.4 mg/l
Chronic toxicity to fish:	NOEC, Other, flow-through, 40 d, mortality, 0.37 mg/l
1,2,4-Trimethylbenzene:	
Acute toxicity to fish:	Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested). LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 7.7 mg/l
Acute toxicity to aquatic invertebrates:	EC50, Daphnia magna (Water flea), 48 Hour, 3.6 mg/l
Hexylene glycol:	
Acute toxicity to fish:	Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 9,450 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates:	EC50, Daphnia magna, 48 Hour, 3,200 mg/l, OECD Test Guideline 202 or Equivalent l
Acute toxicity to algae/aquatic plants:	ErC50, Selenastrum capricornutum (green algae), 72 Hour, Growth rate inhibition, > 429 mg/l, OECD Test Guideline 201
Toxicity to bacteria:	EC50, Bacteria, 16 Hour, > 5,000 mg/l, hUCC
Balance:	
Acute toxicity to fish:	No relevant data found.

PERSISTENCE AND DEGRADABILITY

Fluroxypyr 1-methylheptyl ester:

Biodegradability: Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail

Biodegradation: 32%

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 2.2 mg/mg

Stability in Water (1/2-life): Hydrolysis, half-life, 454 d

Aminopyralid Triisopropanolamine Salt:

Biodegradability: For similar material(s): Aminopyralid. Material is not readily biodegradable according to OECD/EEC guidelines.

Solvent naphtha (petroleum), heavy aromatic:

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail

Biodegradation: 39%

Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Dipropylene glycol monomethyl ether:

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass

Biodegradation: 75%

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.06 mg/mg

Chemical Oxygen Demand: 2.02 mg/mg Dichromate

Biological oxygen demand (BOD):

Incubation Time	BOD
5 d	0%
10 d	0%
20 d	31.6%

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals

Atmospheric half-life: 3.4 - 10.4 Hour

Method: Estimated

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt

Biodegradability: No relevant information found

Naphthalene

Biodegradability: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%)

Theoretical Oxygen Demand: 3.00 mg/mg

Biological oxygen demand (BOD):

Incubation Time	BOD
5 d	57%
10 d	71%
20 d	71%

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals

Atmospheric half-life: 5.9 Hour

Method: Estimated

1,2,4-Trimethylbenzene

Biodegradability: Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Biodegradation: 100%

Exposure time: 1 d

Method: OECD Test Guideline 301C or Equivalent

Theoretical Oxygen Demand: 3.19 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitiser: OH radicals

Atmospheric half-life: 0.641d

Method: Estimated

Hexylene glycol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

Biodegradation: 81%

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.30 mg/mg

Biological oxygen demand (BOD):

Incubation Time	BOD
5 d	2%
10 d	29%
20 d	48%

Balance

Biodegradability: No relevant data found.

BIOACCUMULATIVE POTENTIAL

Fluroxypyr 1-methylheptyl ester:

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water (log Pow): 5.04 Measured

Bioconcentration factor (BCF): 26 Oncorhynchus mykiss (rainbow trout) Measured

Aminopyralid Triisopropanolamine Salt:

Bioaccumulation: For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Solvent naphtha (petroleum), heavy aromatic:

Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Partition coefficient: n-octanol/water (log Pow): 2.9 - 6.1 Measured

Dipropylene glycol monomethyl ether:

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water (log Pow): 1.01 Measured

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt

Bioaccumulation: No relevant data found.

Naphthalene

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water (log Pow): 3.3 Measured

Bioconcentration factor (BCF): 40 - 300 Fish 28 d Measured

1,2,4-Trimethylbenzene

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Partition coefficient: n-octanol/water (log Pow): 3.63 Measured

Bioconcentration factor (BCF): 33 - 275 Cyprinus carpio (Carp) 56 d Measured

Hexylene glycol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water (log Pow): 0.58 Estimated

Bioconcentration factor (BCF): 3 Calculated

Balance

Bioaccumulation: No relevant data found.

MOBILITY IN SOIL

Fluroxypyr 1-methylheptyl ester:

Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient (Koc): 6200 - 43000

Aminopyralid Triisopropanolamine Salt:

For similar active ingredient(s). Aminopyralid. Potential for mobility in soil is very high (Koc between 0 and 50).

Solvent naphtha (petroleum), heavy aromatic:

No relevant data found.

Dipropylene glycol monomethyl ether:

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 0.28 Estimated.

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt

No relevant data found.

Naphthalene

Potential for mobility in soil is medium (Koc between 150 and 500).

Partition coefficient (Koc): 240 - 1300 Measured

1,2,4-Trimethylbenzene

Potential for mobility in soil is low (Koc between 500 and 2000).

Partition coefficient (Koc): 720 Estimated.

Hexylene glycol

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 1 Estimated.

Balance

No relevant data found.

RESULTS OF PBT AND vPvB ASSESSMENT

Fluroxypyr 1-methylheptyl ester:

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Aminopyralid Triisopropanolamine Salt:

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Solvent naphtha (petroleum), heavy aromatic:

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Dipropylene glycol monomethyl ether:

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Naphthalene

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

1,2,4-Trimethylbenzene

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Hexylene glycol

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Balance

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

OTHER ADVERSE EFFECTS

Fluroxypyr 1-methylheptyl ester:

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Aminopyralid Triisopropanolamine Salt:

No relevant data found.

Solvent naphtha (petroleum), heavy aromatic:

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Dipropylene glycol monomethyl ether:

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Naphthalene

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

1,2,4-Trimethylbenzene

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Hexylene glycol

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Section 13: Disposal considerations

Disposal Methods:

If wastes and/or 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. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

This product when disposed of in its unused and uncontaminated state should be treated as a hazardous waste.

Section 14: Transport information

ADG

UN number:	UN 3082	**Packing group:**	III
Hazard class:	9		
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr-meptyl, Naphthalene)		
Marine pollutant:	Fluroxypyr-meptyl, Naphthalene		

Classification for SEA transport (IMO-IMDG):

UN Number:	UN 3082	**Packing Group:**	III
Hazard class:	9		
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr-meptyl, Naphthalene)		
Marine pollutant:	Fluroxypyr-meptyl, Naphthalene		
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code:	Consult IMO regulations before transporting ocean bulk		

Classification for AIR Transport (IATA/ICAO):

UN Number:	UN 3082	**Packing Group:**	III
Hazard class:	9		
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr-meptyl, Naphthalene)		

Hazchem Code: •2X

Further information:

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to the Australian Code for the Transport of Dangerous Goods (ADG). This applies when transported by road or rail in packaging's that do not incorporate a receptacle exceeding 500 kg(L) or IBCs per ADG Special Provision AU01.

Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code and IATA special provision A197.

This information is not intended to convey all specific regulatory or operational requirements/ information relating to this product. Additional transportation system information can be obtained through an authorised sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory information

Australia Inventory of Chemical Substances (**AICS)**	The product is used in a biocide/pesticide application and is subject to the applicable regulation. It contains a component exempt from inventory listing requirements. Because an intentional component of the product is not on the inventory, the product may only be used in the exempt application.
Other Information:	This product is registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA).
Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP): Schedule 6 Poison	
Registration status: Registered	**APVMA approval:** 88924

Section 16: Any other relevant information

Date of preparation or last revision: September 2020

Source of Data: The information provided in this SDS is sourced from Grow Choice studies which have been conducted according to Regulatory requirements including OECD and CIPAC Guidelines and EC Directives. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the government health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

Legend

ACGIH	USA. American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV)
AU OEL	Australia. Workplace Exposure Standards for Airborne Contaminants.
Dow IHG	Dow Industrial Hygiene Guideline
Peak	Exposure standard – peak limit
SKIN	Absorbed via skin
STEL	Short term exposure limit
TLV-C	Ceiling Limit Value
TWA	Time weighted average

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP – National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN -United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System.

Note: This product is a registered agricultural chemical and must, therefore, be used in accordance with the container label directions

CONTACT POINT: Grow Choice Pty Ltd
(02) 6766 3979
24 HOURS EMERGENCY CONTACT: 13 11 26

This Material Safety Data Sheet 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 SDS 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.

DISCLAIMER
This product complies with the specifications in its statutory registration. Implied terms and warranties are excluded. Grow Choice's liability for breach of the express or any non-excludable implied warranty is limited to product replacement or purchase price refund. The purchaser must determine suitability for intended purpose and take all proper precautions in the handling, storage and use of the product including those on the label and/or safety data sheet failing which Grow Choice shall have no liability.