1. IDENTIFICATION

Product Identifier

Product Name	**KELPIE® TRI-F 480 HERBICIDE**
Product Code(s)	**A8661H**

Other Means of Identification

Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS TRIFLURALIN)
Recommended Use:	Herbicide
Details of Manufacturer or Importer	SINOCHEM INTERNATIONAL AUSTRALIA PTY LTD ABN: 74 160 164 616
Address	Level 1, 2 Lyonpark Road Macquarie Park, NSW, 2113 Australia
Telephone	+61 2 8014 5200
Emergency Phone Number	Australia: 1800 033 111

2. HAZARD IDENTIFICATION

Classification of the Hazardous Chemical:

Flammable liquid	Category 4
Aspiration hazard	Category 1
Skin sensitisation	Category 1
Serious eye damage/eye irritation	Category 2B
Carcinogenicity	Category 2

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Signal Word: DANGER

Hazard Statement(s):

H227	Combustible liquid.
H304	May be fatal is swallowed and enters airways.
H317	May cause an allergic skin reaction.
H320	Causes eye irritation.
H336	May cause drowsiness and dizziness.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s):

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing mist/vapours/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/face protection.
P281 Use personal protective equipment as required.

Response:

P331 Do NOT induce vomiting.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P333 + P313 IF skin irritation or rash occurs: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P370 + P378 In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.
P391 Collect spillage.

Storage:

P403 + P235 Store in well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazard Symbols:

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Mixture:

Identity of Chemical Ingredient	CAS Number	Proportion (w/w)
Trifluralin	1582-09-8	45.7 %
Solvent naphtha (petroleum) heavy aromatic	64742-94-5	40 – 50 %
Ingredients determined not to be hazardous	-	to 100 %

4. FIRST-AID MEASURES

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

Description of Necessary First Aid Measures:

Inhalation:	Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a doctor or poisons information centre immediately.
Eye contact:	If in eyes, wash out immediately with water, also under the eyelids, for at least 15 minutes. Remove contact lenses. In all cases of eye contamination it is a sensible precaution to seek medical advice.
Skin contact:	If skin contact occurs, remove contaminated clothing and wash skin with soap and water. If irritation occurs, seek medical advice. Wash contaminated clothing before re-use.
Ingestion:	Rinse mouth with water. If swallowed, do NOT induce vomiting due to aspiration hazard. Never give anything by the mouth to an unconscious patient. Seek immediate medical assistance.
Symptoms Caused by Exposure:	No known symptoms.
Medical Attention and Special Treatment:	Treat symptomatically. Symptoms may be delayed. Product aspirated into the lungs may cause pulmonary oedema and chemical pneumonitis.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	**Small fires:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. **Large fires:** Alcohol-resistant foam or Water spray.
Specific Hazards Arising from the Chemical:	This product may burn and/or decompose if exposed to fire. Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride and hydrogen cyanide.
Special Protective Equipment and Precautions for Fire Fighters:	Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.
Hazchem Code:	•3Z

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Isolate spill or leak area immediately. Clear area of all unprotected personnel. Shut off all possible sources of ignition. Refer to protective measures listed in sections 7 and 8.
Environmental Precautions:	Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and Materials for Containment and Clean Up:	Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up-wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling:	Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements. Avoid skin and eye contact and breathing in vapour, mists and aerosols. Thoroughly clean equipment after use. Keep out of reach of children. When using do not eat, drink or smoke. Take precautionary measures against static discharges.
Conditions for Safe Storage, Including any Incompatibilities:	Store in the closed, original container in a well-ventilated area, as cool as possible and away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters:

Exposure Standards:

Chemical name	CAS Number	Exposure Limit	Value Type	Source
Naphthalene	91-20-3	52 mg/m^3 (10 ppm),	8hr TWA	HCIS, Safe Work Australia
		79 mg/m^3 (15 ppm)	15 min STEL	

Biological Monitoring: No specific biological monitoring required.

Engineering Controls:

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Workplace Exposure Standards. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Personal Protective Equipment:

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES, RESPIRATOR.

Eye/face protection:

Safety goggles or face shield.
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Skin and body protection:

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace.

Wear as appropriate: overalls.

Hand protection:

Wear protective gloves.

Always wash hands before smoking, eating, drinking or using the toilet.

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break-through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Respiratory protection:

If determined by a risk assessment an inhalation risk exists, wear an organic vapour/particulate respirator or an air supplied mask meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Colour:	Orange clear liquid
Odour:	Solvent
Specific gravity:	1.048 – 1.054
pH:	Not available
Melting point / freezing point:	Not available
Boiling Point/Range (°C):	180-210°C (for solvent)
Flash point (°C):	> 63°C
Flammability (solid, gas):	Not applicable
Flammability limit in air:	Not available
Upper flammability or explosive limits:	Not available
Lower flammability or explosive limits:	Not available
Vapor pressure:	Not available
Vapor density:	Not available
Relative density:	Not available
Water solubility:	Emulsifies in water
Solubility(ies):	Not available
Partition coefficient:	Not available
Auto-ignition temperature (°C):	Not available
Decomposition temperature:	Not available
Kinematic viscosity:	Not available
Dynamic viscosity:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	No information available.
Chemical stability:	Stable under normal conditions of use.
Possibility of hazardous Reactions:	Hazardous polymerisation will not occur.
Conditions to avoid:	Avoid exposure to heat, sources of ignition, and open flame. Avoid exposure to direct sunlight.
Incompatible materials:	Incompatible with strong oxidising agents.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Health Effects from Likely Routes of Exposure:

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion:	Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkeness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs.
Eye contact:	May cause eye irritation, stinging, reddening and watering. Avoid eye contact.
Skin contact:	Skin contact causes irritation. May cause an allergic skin reaction. Avoid skin contact. Prolonged or repeated skin contact may cause allergic dermatitis.
Inhalation:	Vapours may cause drowsiness and dizziness.
Acute toxicity:	Data for trifluralin:

Oral toxicity:	LD_{50} (rat):	>10,000 mg/kg
Dermal toxicity:	LD_{50} (rabbit):	>2,000 mg/kg
Inhalation toxicity:	LC_{50} (1h), rat:	2.8 mg/L
Eye irritation:	Slight irritant (rabbit).	
Skin irritation:	Mild skin irritant (rabbit).	
Skin sensitisation:	Skin sensitiser (Guinea Pig).	

Mutagenicity:	No evidence of mutagenic effects seen in studies with trifluralin.
Carcinogenicity:	In long-term studies in rats with trifluralin there was limited evidence of carcinogenicity. In one study at the highest dose level of 325 mg/kg bw/day tumours were seen in kidney, bladder, and thyroid. In long-term studies in mice, a carcinogenic effect was not observed. Trifluralin is classified by Safe Work Australia as suspected of causing cancer.
Reproductive toxicity:	Animal testing with trifluralin do not show any reproductive or developmental toxicity.
Specific Target Organ Toxicity (STOT) - single exposure:	The substance or mixture is not classified as specific target organ toxicant, single exposure.
Specific Target Organ Toxicity (STOT) - repeated exposure:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration hazard:	This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Based on data for trifluralin:		
Toxicity to fish:	Very toxic to aquatic organisms.		
	Rainbow trout	96 hr LC_{50} :	0.02 – 0.06 mg/L
	Bluegill sunfish	96 hr LC_{50} :	0.05 – 0.07 mg/L

Toxicity to daphnia and other aquatic invertebrates:	*Daphnia magna*	48 hr LC_{50} :	0.5 – 0.6 mg/L
Toxicity to algae:	Freshwater diatom *Navicula pelliculosa*	5 d EC_{50} :	0.015 mg/L
Toxicity to birds:	Practically non-toxic to birds		
	Bobwhite quail	LD_{50} :	>2,000 mg/kg
	Mallard duck	LD_{50} :	1,421 mg/kg
Toxicity to bees:	Honeybee	LD_{50} (oral) :	>100 µg/bee
Toxicity to earthworms	Toxic to earthworms		
Persistence/degradability:	Moderate to high persistence in soil depending on conditions. Expected to biodegrade very slowly in the environment by microbial action.		
	Half-life, soil	45 days – 8 months	(trifluralin)
	Half-life, water	1 – 2 days	(trifluralin)
Mobility in Soil:	Trifluralin is relatively immobile in soils (K_{OC} : 8,764.7).		
Bioaccumulative Potential:	Bioconcentration potential of trifluralin is high.		
	Log Pow = 5.27	BCF = 2,280 (Rainbow trout)	
Other Adverse Effects:	No information available.		

13. DISPOSAL CONSIDERATIONS

Safe Handling and Disposal Methods: Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Disposal of Contaminated Packaging: Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.

For refillable container, empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

14. TRANSPORT INFORMATION

ADG

UN number:	3082
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIFLURALIN)
Class:	9
Packing group:	III
Hazchem Code:	•3Z
Remarks:	Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to the provisions of the Australian Code for the Transport of Dangerous Goods by Road and Rail when transported by road or rail in packagings, IBC's, or any other receptacle not exceeding 500 kg(L).

IATA-DGR

UN number:	3082
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIFLURALIN)
Class:	9
Packing group:	III
Packing instruction (cargo aircraft):	964
Packing instruction (passenger aircraft):	Y964
Environmentally hazardous:	Yes

IMDG-Code

UN number:	3082
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains TRIFLURALIN)
Class:	9
Packing group:	III
EmS Code:	F-A S-F
Marine pollutant:	Yes

15. REGULATORY INFORMATION

APVMA Product Registration Number: 88891

Poisons Schedule (SUSMP): Schedule 5

16. OTHER INFORMATION

Date of preparation or review: 08/05/2023

Full text of abbreviations and acronyms:

ADG Australian Dangerous Goods Code

APVMA	Australian Pesticides & Veterinary Medicines Authority
EmS	Emergency Schedule
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
LD_{50}	Lethal Dose to 50% of a test population (Median Lethal Dose)
LC_{50}	Lethal Concentration to 50 % of a test population
MARPOL	International Convention for the Prevention of Pollution from Ships
NO(A)EL	No Observed (Adverse) Effect Level
n.o.s.	Not Otherwise Specified
OECD	Organization for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative and Toxic substance
SDS	Safety Data Sheet
STEL	Short Term Exposure Limit - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
TWA	The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

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