1. IDENTIFICATION

Product Identifier

Product Name	**KELPIE® AMINE 625 HERBICIDE**
Product Code(s)	**A23519A**

Other Means of Identification

Proper shipping name:	Environmentally Hazardous Substance, Liquid, N.O.S. (sea and air transport only)
Recommended Use:	Herbicide
Details of Manufacturer or Importer	SINOCHEM INTERNATIONAL AUSTRALIA PTY LTD ABN: 74 160 164 616
Address	Level 8 / 606 St Kilda Road Melbourne, Victoria, 3004 Australia
Telephone	+61 3 9520 8888
Emergency Phone Number	Australia: 1800 033 111

2. HAZARD IDENTIFICATION

Classification of the Hazardous Chemical:

Acute Toxicity	Category 4
Eye damage	Category 1
Skin sensitisation	Category 1
STOT (single exposure)	Category 3
Hazardous to the aquatic environment (chronic)	Category 3

Signal Word: DANGER

Hazard Statement(s):

H302 Harmful if swallowed.
H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H335 May cause respiratory irritation
H412 Harmful to aquatic life with long lasting effects

Precautionary Statement(s):

Prevention:

P261 Avoid breathing mist/vapours/spray
P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P271 Use only outdoors or in a well-ventilated area
P272 Contaminated work clothing should not be allowed out of the workplace

P280 Wear protective gloves/protective clothing/eye protection/face protection

Response:

Inhalation

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 Call a POISON CENTER or doctor/physician if you feel unwell
INGESTION
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 Rinse mouth
P331 Do NOT induce vomiting

Skin

P302+P352 IF ON SKIN: Wash with plenty of soap and water
P333+P313 If skin irritation or rash occurs: Get medical advice/attention
P362 Take off contaminated clothing and wash before re-use

Eye

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician

Storage:

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

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

Hazard Symbols:

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Substance: Active Ingredient: 2,4-Dichlorophenoxyacetic acid (present as the dimethylamine and diethanolamine salts)

Mixture:

Identity of Chemical Ingredient	CAS Number	Proportion (w/w)
2,4-D (present as the dimethylamine and diethanolamine salts)	94-75-7	50-70 %
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:	If inhaled, remove affected person from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.
Eye contact:	If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.
Skin contact:	Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.
Ingestion:	Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.
Symptoms Caused by Exposure:	No information available.
Medical Attention and Special Treatment:	Treat symptomatically.

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, ammonia and oxides of nitrogen.
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:	Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible contain the spill. As a water based product, if spilt on electrical equipment the product will cause short-circuits. Place inert absorbent, non-combustible material onto pillage. Use clean non-sparking tools to collect the material and place into suitable labelled containers for subsequent recycling or disposal.
Environmental Precautions:	Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations. 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, ammonia and oxides of nitrogen.
Methods and Materials for Containment and Clean Up:	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.

7. HANDLING AND STORAGE

Precautions for Safe Handling:	Avoid inhalation of vapours and mists, and skin, or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of mists or vapours in the work atmosphere. Maintain high standards of personal hygiene i.e. washing hands prior to eating, drinking, smoking or using toilet facilities.
Conditions for Safe Storage, Including any Incompatibilities:	Store in a cool, dry, well-ventilated area, out of direct sunlight. Protect from freezing. Store in suitable labelled containers. Keep containers tightly closed. Store away from incompatible materials. Ensure that storage conditions comply with applicable local and national regulations.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters:

Exposure Standards:

Chemical name	CAS Number	Exposure Limit	Value Type	Source
2,4-D	94-74-7	10 mg/m^3	8h TWA	HCIS, Safe Work Australia
Dimethylamine	124-40-3	3.8 mg/m^3 (2ppm)	8h TWA	
		11 mg/m^3 (6ppm)	15 min STEL	
Diethanolamine	111-42-2	13 mg/m^3 (3ppm)	8h TWA	

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 use of technical measures should always have priority over the use of personal protective equipment.

When selecting personal protective equipment, seek appropriate professional advice.

Personal protective equipment should comply with relevant national standards

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.

Wash contaminated clothing and other protective equipment before storage or re-use.

Eye/face protection: 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: boots, 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:	Light brown
Odour:	Characteristic
Specific gravity:	1.16 (20°C)
pH:	7.0-9.0
Melting point / freezing point:	Not available
Boiling Point/Range (°C):	Not available
Flash point (°C):	Not available
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 applicable
Relative density:	1.16 g/cm^3 (20°C)
Water solubility:	Soluble in water
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:	Reacts with incompatible materials.
Chemical stability:	Stable under normal conditions of storage and handling.
Possibility of hazardous Reactions:	No dangerous reactions known under conditions of normal use.
Conditions to avoid:	Heat, flames and other sources of ignition.
Incompatible materials:	Strong oxidising agents.
Hazardous decomposition products:	Thermal decomposition may result in the release of toxic and/or irritating products: fumes including oxides of nitrogen, carbon monoxide and carbon dioxide.

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:	Harmful if swallowed. Ingestion of this product can cause irritation to the mouth, throat, oesophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea.	
Eye contact:	Causes eye damage. Eye contact will cause stinging, blurring, tearing, severe pain and possible burns, necrosis, permanent damage and blindness.	
Skin contact:	Contact with skin may result in irritation. The symptoms may include redness and itching. May cause an allergic skin reaction. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis.	
Inhalation:	May cause respiratory irritation. Inhalation of product mists can cause irritation of the nose, throat and respiratory system.	
Acute toxicity:	Oral toxicity:	375 to 666 mg/kg (rat) (2,4-D)
	Dermal toxicity:	1829 - >2000 mg/kg (rat) (2,4-D)
	Inhalation toxicity:	Moderate hazard exists from inhalation of spray
	Skin irritation:	Irritating to skin
	Eye irritation:	Corrosive to eyes
	Skin sensitisation:	Not a skin sensitiser
Chronic effects:		
Mutagenicity:	2,4-D has been very extensively tested and was found to be nonmutagenic in most systems. 2,4-D did not damage DNA in human lung cells. However, in one study, significant effects occurred in chromosomes in cultured human cells at low exposure levels. The data suggest that 2,4-D is not mutagenic or has low mutagenic potential.	
Carcinogenicity:	Not considered to be a carcinogenic hazard based on weight of evidence. Diethanolamine is listed as a Group 2B: Possibly carcinogenic to humans according to International Agency for Research on Cancer (IARC).	
Reproductive toxicity:	2,4-D may cause birth defects at high doses. Rats fed 150 mg/kg/day on days 6 to 15 of pregnancy had offspring with increased skeletal abnormalities, such as delayed bone development and wavy ribs. This suggests that 2,4-D exposure is unlikely to be teratogenic in humans at expected exposure levels.	
Specific Target Organ Toxicity (STOT) - single exposure:	The substance or mixture is classified as specific target organ toxicant, single exposure, category 3.	
Specific Target Organ Toxicity (STOT) - repeated exposure:	The substance or mixture is not classified as specific target organ toxicant repeat exposure.	
Aspiration hazard:	No aspiration hazard expected.	

12. ECOLOGICAL INFORMATION

Ecotoxicity:			
Toxicity to fish:	Bluegill sunfish	96 hr LC_{50} :	
	Rainbow trout	96 hr LC_{50} :	100 mg ae/L
	Carp	96 hr LC_{50} :	
Toxicity to daphnia and other aquatic invertebrates:	Daphnia magna	48 hr LC_{50} :	>103 mg ae/L
Toxicity to bees:	Honey bees	LD_{50}	> 83 µg/bee
Toxicity to birds:	Bobwhite quail	LD_{50}	>415 mg ae/kg
Persistence/degradability:			
	Half-life, soil	< 7 days	2,4-D has low soil persistence
	Half-life, water	1 – several weeks	Microorganisms readily degrade 2,4-D. Rates of breakdown increase with increased nutrients, sediment load, and dissolved organic carbon.
Mobility in Soil:	Highly mobile in soils. Rapidly mineralised reducing potential to enter groundwater.		
	Koc	70 – 117 mL/g	
Bioaccumulative Potential:	Low bioaccumulation potential. 2,4-D is rapidly biodegraded		

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 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 2,4-D)
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 2,4-D)
Class:	9
Packing group:	III
Packing instruction (cargo aircraft):	964
Packing instruction (passenger aircraft):	964
Environmentally hazardous:	Yes

IMDG-Code

UN number:	3082
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS 2,4-D)
Class:	9
Packing group:	III
EmS Code:	F-A S-F
Marine pollutant:	Yes

15. REGULATORY INFORMATION

APVMA Product Registration Number:	70018
Poisons Schedule (SUSMP):	6

16. OTHER INFORMATION

Date of preparation or review:

Full text of abbreviations and acronyms:

ADG	Australian Dangerous Goods Code
ae	Acid equivalent
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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