

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name: Kenso Agcare Trifluralin 480 Selective Herbicide
Product Type: Group 3 Herbicide
Company Name: Kenso Corporation (M) Sdn Bhd
Address: Level 1, 98 Commercial Road, Teneriffe QLD 4005
Telephone Number: (07) 3216 1188
Emergency Telephone Number: 000 (Police or Fire Brigade)
13 11 26 (Poisons Information Centre)
Use: A pre-emergence herbicide for the control of annual grasses and certain broad leaf weeds in certain horticultural and agricultural crops as listed in the Directions for Use table.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Classified as hazardous according to criteria of Safe Work Australia. Not classified as a Dangerous Good according to the ADG Code.



Classification of the Hazardous Chemical: Flammable liquids – Category 4
Aspiration hazard – Category 1
Skin sensitization – Category 1
Serious eye damage/eye irritation – Category 2B
Carcinogenicity – Category 2
Hazardous to the aquatic environment, long term – Chronic 1

GHS Signal Word: **DANGER**

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

Prevention: P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash contacted areas thoroughly after handling.
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.

Response: P301+P310: IF SWALLOWED: Immediately Call a POISON

CENTER/doctor/physician.
 P302+P352: IF ON SKIN: Wash with plenty of soap and water.
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308+P313: IF exposed or concerned: Get medical advice/attention.
 P321: Specific treatment (see FIRST AID on this label)
 P331: Do NOT induce vomiting.
 P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313: If eye irritation persists: Get medical advice/attention.
 P362+P364: Take off contaminated clothing and wash it before reuse.
 P370+P378: In case of fire: Use water fog, foam, dry agent (carbon dioxide, dry chemical powder) to extinguish.
 P391: Collect spillage.
 P403: Store in a well-ventilated place.
 P405: Store locked up.
 P501: Dispose of contents/container as specified on the registered label

Storage:
Disposal:
SUSMP Classification: S5
ADG Classification: N/A
UN Number: N/A

Emergency Overview

Physical Description & colour: Bright orange, clear liquid.

Odour: Solvent odour.

Major Health Hazards: Pure Trifluralin is practically nontoxic to test animals by oral, dermal, or inhalation routes of exposure. The oral LD₅₀ for technical Trifluralin in rats is greater than 10,000 mg/kg, in mice is greater than 5,000 mg/kg, and in dogs, rabbits, and chickens is greater than 2,000 mg/kg.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Trifluralin	1582-09-8	48%
Inert ingredients	secret	<15%
Liquid hydrocarbon		to 100%

SECTION 4 – FIRST AID MEASURES

Inhalation:	Remove affected person to fresh air until recovered. Apply CPR if there is no breathing and no pulse.
Skin contact:	Wash affected areas thoroughly with soap and water. Remove contaminated clothing and launder before re-use.
Eye contact:	If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.
Ingestion:	If swallowed Do Not induce vomiting; seek medical advice immediately and show this container or label or contact the Poisons Information Centre on 13 11 26

	(Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.
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Advice to Doctor:

Treatment is symptomatic.

SECTION 5 – FIRE FIGHTING MEASURES

Specific Hazard

Product is a combustible liquid, (C1)

Fire/Explosion Hazard

Dangerous Decomposition or Combustion Products

Thermal Decomposition

There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

If involved in a fire, it will emit hydrogen fluoride, oxides of nitrogen and possibly cyanides.

Extinguishing Media

Extinguish fire with carbon dioxide, dry chemical, foam and water fog.

Fire Fighting

If a significant quantity of this product is involved in a fire, call the fire brigade.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills & Disposal

Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal.

Personal Protection

For appropriate personal protective equipment (PPE), refer to Section 8.

Environmental Precautions

This product is a herbicide and spills can damage crops, pastures and desirable vegetation. Prevent from entering drains, waterways or sewers.

SECTION 7 – HANDLING AND STORAGE

Handling

When handling this product, do not eat, drink or smoke.

When mixing this product always wear a PVC or rubber apron, elbow length PVC gloves, face shield or goggles and overalls buttoned at the wrist and neck.

When spraying this product, wear a face shield or goggles

After each days use, wash gloves, face shield or goggles and overalls.

If product gets on skin, immediately wash area with soap and water.

Storage

Store in the closed, original container in a well-ventilated area as cool as possible out of direct sunlight. Keep from contact with fertilisers and seeds.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

No exposure standards have been set for this product or the active ingredients. The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m³; 17ppm TWA, as total hydrocarbon.

Engineering Controls

Handle in well ventilated areas, generally natural ventilation is adequate.

Personal Protection

When opening the container and preparing the spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles. Sensitive workers should use protective clothing.

Hygiene Measures

After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing and safety equipment.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Clear liquid
Colour:	Bright orange
Odour:	Solvent odour
Vapour Pressure:	13.7 mPa @ 25 °C for trifluralin 0.5 kPa @ 38°C for solvent
Specific Gravity:	1.05 ± 0.01
Flashpoint:	75°C
Flammability:	Combustible liquid, (C1)
Solubility:	Emulsify in water

SECTION 10 – STABILITY AND REACTIVITY

Stability

Stable under normal conditions. Do not store below 5 °C.

Hazardous Polymerization

Hazardous polymerization is not possible.

Materials to Avoid

Prolonged reaction with water can cause slow decomposition and the formation of acid which may attack drums. If a part open drum is to be stored, ensure that no water has been added to the drum.

Hazardous Reaction

Violent reactions between this product and oxidizing agents are possible.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicology Information

No harmful effects are expected if the precautions on the label and this SDS are followed.

Toxicity Data:

Acute Toxicity – Oral

LD₅₀ for rats: >10,000 mg/kg

LD₅₀ for mice: >5,000 mg/kg

LD₅₀ for dogs, rabbits and chickens: >2,000 mg/kg

Acute Toxicity – Dermal

LD₅₀ for rabbits: >2000 mg/kg

Acute Toxicity - Inhalation

LC₅₀ (1 hr) for rats: >2.8 mg/L

Pure trifluralin is practically non-toxic to test animals by oral, dermal or inhalation routes of exposure. Nausea and severe gastrointestinal discomfort may occur after eating trifluralin. Trifluralin does not cause skin irritation. When applied to the eyes of rabbits, trifluralin produced slight irritation, which cleared within 7 days. Skin sensitization (allergies) may occur in some individuals. Inhalation may cause irritation of the lining of the mouth, throat or lungs.

Potential Health Effects

Health Effects

Acute:

- Inhalation:** Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.
- Skin contact:** Available data indicates that this product is not harmful. It should present no hazards in normal use. However product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.
- Eye contact:** Available data shows that this product is not harmful. However product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.
- Ingestion:** Available data shows that this product is harmful, but symptoms are not available. This product is unlikely to cause any irritation problems in the short or long term.

Carcinogen Status:

- NOHSC:** No significant ingredient is classified as carcinogenic by NOHSC.
- NTP:** No significant ingredient is classified as carcinogenic by NTP.
- IARC:** No significant ingredient is classified as carcinogenic by IARC.

Chronic toxicity:

Prolonged or repeated skin contact with trifluralin may cause allergic dermatitis. The administration of 25 mg/kg/day to dogs for 2 years resulted in no observed toxicity. In another study of beagle dogs, toxic effects were observed at 18.75 mg/kg/day. These included decreased red blood cell counts and increases in methaemoglobin, total serum lipids, triglycerides, and cholesterol. Trifluralin has been shown to cause liver and kidney damage in other studies of chronic oral exposure in animals.

Reproductive effects:

The reproductive capacity of rats fed dietary concentrations of trifluralin as high as 10 mg/kg/day was unimpaired through four successive generations. Trifluralin administered to pregnant rabbits at doses as high as 100 mg/kg/day, and to rats at doses as high as 225 mg.kd.day, produced no adverse effect on either the mothers or offspring. Loss of appetite and weight loss followed by miscarriages were observed when pregnant rabbits were fed high doses of 224 or 500 mg/kg/day. Foetal weight decreased and there was an increase in the number of foetal runts at the 500 mg/kg/day dosage. It is unlikely effects on reproduction will be produced in humans at expected exposure levels.

Teratogenic effects:

No abnormalities were observed the offspring of rats fed doses as high as 10 mg/kg/day for four generations. Studies in the rat and rabbit show no evidence that trifluralin is teratogenic. The highest doses tested in these studies were 1000 mg/kg/day in rats and 500 mg/kg/day in rabbits. Trifluralin does not appear to be teratogenic.

Mutagenic effects:

No evidence of mutagenicity was observed when trifluralin was tested in live animals, and in assays using bacterial and mammalian cell cultures.

Carcinogenic effects:

In a 2 year study of rats fed 325 mg/kg/day, the highest dose tested, malignant tumors developed in the kidneys, bladder, and thyroid. However, more data are needed to characterize its carcinogenicity.

Organ toxicity:

Liver, kidney, and thyroid damage appear to be the main toxic effects in chronic animal studies.

Fate in human and animals:

Trifluralin is not readily absorbed into the bloodstream from the gastrointestinal tract; 80% of single oral doses administered to rats and dogs were excreted in the faeces.

Other information:

The ADI for humans (Trifluralin) is 0.02 mg/kg/bw/day. The corresponding NOAEL is set at 2.5 mg/kg/bw/day. *ADI= Acceptable Daily Intake; NOAEL: No Observable Adverse Effect Level. Data adopted from Australia ADI List, December 2023.

SECTION 12 – ECOLOGICAL INFORMATION

Acute Toxicity – Fish

The following is data for the active ingredient, trifluralin.

LC₅₀ (96 hr) for young rainbow trout is 0.088 mg/l.

LC₅₀ (96 hr) for young bluegill sunfish is 0.089 mg/l.

Acute Toxicity – Daphnia

LC₅₀ (48 hr) for daphnia is 0.245 mg/l.

Acute Toxicity – Other Organisms

Birds: Not toxic to birds. LD₅₀ for bobwhite quail is >2000 mg/kg

Bees: Not toxic to bees. LD₅₀ >100 µg/bee.

Environmental Protection

Marine pollutant. Spray drift can cause damage, read the label for more information.

Persistence / Degradability

Trifluralin degrades in soil at a relatively moderate rate, about 85-90% of the material is lost in normal soil in ½ to 1 year.

Other Precautions

Do not spray in high winds. Do not contaminate dams, waterways or sewers with this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

SECTION 14 – TRANSPORT INFORMATION

ADG

UN Number: 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains TRIFLURALIN)
Class: 9
Packaging group: III
Hazchem: 3Z
Storage and Transport: Considered non dangerous for road and rail transport (in packaging) by the Australian Code for the Transport of Dangerous Goods by Road and Rail. Ref: ADG7; SP No. AU01.

IMO-IMDG

UN Number: 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains TRIFLURALIN)
Class: 9
Packaging group: III
Marine pollutant: Yes

SECTION 15 – REGULATORY INFORMATION

SUSMP Classification: S5
Packaging & Labelling: CAUTION
 KEEP OUT OF REACH OF CHILDREN
 READ SAFETY DIRECTIONS BEFORE OPENING OR USING

SECTION 16 – OTHER INFORMATION

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code: Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS: Australian Inventory of Chemical Substances
CAS number: Chemical Abstracts Service Registry Number
Hazchem Number: Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC: International Agency for Research on Cancer
NOHSC: National Occupational Health and Safety Commission
SUSMP: Standard for the Uniform Scheduling of Medicines & Poisons
UN Number: United Nations Number

CONTACT POINT:

Police and Fire Brigade: Dial 000
National Poisons Information Centre: Dial **13 11 26 (from anywhere in Australia)**
 For 24 hour emergency response: Dial 0428 776 327
 Ask for Russell Clark