

MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name: Kenso Agcare Trifluralin 480 Selective Herbicide
Product Type: Group D Herbicide
Company Name: Kenso Corporation (M) Sdn Bhd
Address: Unit 3C, 59, Oxford Street, Bulimba Queensland 4171
Telephone Number: (07) 3217 9788
Facsimile Number: (07) 3217 9733
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: This product is classified as hazardous according to criteria of NOHSC Australia. Not a Dangerous Goods according to the Australian Dangerous Goods (ADG) code.
Risk Phrase(s): R22, R36/38. Harmful if swallowed. Irritating to eyes and skin.
Safety Phrase(s): S20, S24/25. When using, do not eat or drink. Avoid contact with skin and eyes
SUSDP Classification: S5
ADG Classification: None allocated. Not a Dangerous Good under the ADG Code.
UN Number: None allocated.

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.

Potential Health Effects

Health Effects

Acute:

Swallowed: 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.
Eye: 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.
Skin: 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.

Inhaled: Available data indicates that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

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.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Trifluralin	1582-09-8	48 % w/v
Liquid hydrocarbon		47.5% w/v

SECTION 4 – FIRST AID MEASURES

Swallowed	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.
Eye	If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.
Skin	Wash affected areas thoroughly with soap and water. Remove contaminated clothing and launder before re-use.
Inhaled	Remove affected person to fresh air until recovered. Apply CPR if there is no breathing and no pulse.

Advice to Doctor:

Treatment is symptomatic.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazards: This product is classified as a C1 combustible product. 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.

Dangerous decomposition or Combustion products: 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.

Flash Point: Combustible but does not meet the definition of a 'flammable liquid'.

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition Temperature: No data.

Flammability Class: C1

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

Storage

Store in the closed, original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight. Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.

Handling

Trifluralin is coloured and will strongly stain skin and clothing. If skin has been exposed to the product, thoroughly washing with soap and water will remove any excess product. The colour on the skin is not deep and will naturally disappear over a few days.

Other information

Always read the label and any attached leaflet before use.

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 Density:	1.18 ± 0.01
Flashpoint:	75°C
Flammability Limits:	No data
Solubility in Water:	Form emulsion

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 MSDS are followed.

Toxicity Data:

Acute oral LD₅₀ for rats: >10,000 mg/kg

Acute oral LD₅₀ for mice: >5,000 mg/kg

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

Acute dermal LD₅₀ for rabbits: >2000 mg/kg

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.

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.

SECTION 12 – ECOLOGICAL INFORMATION**Other Precautions**

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

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.

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.

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 Code: This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

SECTION 15 – REGULATORY INFORMATION

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database. The following ingredients: Trifluralin, are mentioned in the SUSDP.

SECTION 16 – OTHER INFORMATION

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

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 0439 933 556

Ask for Murray Goodlich