

# MATERIAL SAFETY DATA SHEET



Ph: 03 9863 8081/ Fax: 03 9863 8083  
Suite 822, St Kilda Road Tower,  
1 Queens Road, Melbourne, VIC 3004  
  
email@sanonda.com  
www.sanonda.com

## **SANONDA HERBICIDE TRIFLURALIN 480EC**

### **1. IDENTIFICATION OF THE SUBSTANCE AND THE COMPANY**

**Product Name:** Sanonda Herbicide Trifluralin 480EC  
**Product Use:** A pre-emergence herbicide for the control of annual grasses and certain broadleaf weeds in certain horticultural and agricultural crops.  
**Supplier:** Sanonda (Australia) Pty Ltd  
**ACN:** 059 813 973  
**Address:** Suite 822, St Kilda Rd Towers, No.1 Queens Rd, Melbourne VIC 3004  
**Telephone:** 03 9863 8081  
**Facsimile:** 03 9863 8083  
**Emergency phone number:** 03 9863 8081

### **2. HAZARD IDENTIFICATION**

#### **Statement of Hazardous Nature**

Hazardous according to the criteria of NOHSC. Non-dangerous goods.

#### **Risk Phrase(s)**

R22 Harmful if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

R65 Harmful – may cause lung damage if swallowed.

#### **Safety Phrase(s)**

S1/2 Keep locked up and out of the reach of children.

S3/9/49 Keep only in the original container in a cool, well-ventilated place.

S13 Keep away from food, drink and animal feeding stuffs.

S16 Keep away from sources of ignition - No smoking.

S20/21 When using do not eat or drink/smoke

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S23 Do not breathe spray.

S24/25 Avoid contact with skin/eyes

S29/35 Do not empty into drains/Dispose of material and container in a safe way.

# MATERIAL SAFETY DATA SHEET

## **3. COMPOSITION/ INFORMATION ON INGREDIENTS**

<b>Chemical Entity</b>	<b>CAS No</b>	<b>Concentration (g/L)</b>	<b>TWA (mg/m<sup>3</sup>)</b>	<b>STEL (mg/m<sup>3</sup>)</b>
Trifluralin	1582-09-8	480	Not set	Not set
Emulsifier	Secret	49	Not set	Not set
Hydrocarbon Solvent	64742-94-5	Secret	Not set	Not set

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

## **4. FIRST AID MEASURES**

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (phone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to a doctor.

### **FIRST AID**

#### **Inhalation:**

First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

#### **Skin Contact:**

Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

#### **Eye Contact:**

Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed, while holding the eyelid(s) open. Obtain medical advice immediately if irritation occurs. Take special care if exposed person is wearing contact lenses.

#### **Ingestion:**

If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

### **SYMPTOM**

The more commonly reported adverse effects following exposure to trifluralin products are skin irritation and rash, nausea, vomiting, cramping, and diarrhea, eye irritation, dizziness, headache, and other minor central nervous system effects, fever and/or chills, and muscle aches or weakness.

### **ADVICE TO DOCTOR**

No specific antidote. Treat symptomatically and supportively.

## **5. FIRE FIGHTING MEASURES**

### **FIRE AND 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.

# MATERIAL SAFETY DATA SHEET

## **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.

## **HAZARDOUS COMBUSTION PRODUCTS**

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

## **FIRE INCOMPATIBILITY:**

None.

## **HAZCHEM:**

Not allocated.

## **PERSONAL PROTECTIVE EQUIPMENT**

## **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. On-site disposal of concentrate is not acceptable.

### **Clean-up Methods - Large Spillages**

Place damaged containers in recovery bins (if available) and return to manufacturer. If large liquid spills occur, attempt to recover as much spilt material from sumps and bunded areas before absorbing remaining material into vermiculite or other absorbent.

### **Personal Protection**

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

### **Environmental Precautions**

Prevent from entering drains, waterways or sewers.

## **7. HANDLING AND STORAGE**

### **HANDLING**

Do NOT spray in high winds.

Do NOT contaminate dams, rivers or streams, or any other water bodies with pesticide or used containers.

### **STORAGE**

This product is a S5 Poison. Store in the closed, original container in a dry, well ventilated area out of direct sunlight. Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.

## **OTHER INFORMATION**

Always read the label and any attached leaflet before use. Do not use on or in situations where damage to susceptible crops or plants such as cotton, tobacco, tomatoes, flowers, vines, fruit trees or other susceptible crop plants may result from direct application or drift. Sprayed weeds may become more palatable to stock and a higher intake of some weeds may result in stock poisoning and death from causes such as nitrate poisoning. Care should be taken especially where capeweed, Paterson's curse and variegated thistles predominate in the pasture.

# MATERIAL SAFETY DATA SHEET

## **8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment:	<b>AS/NZS 1715</b>
Protective Gloves:	<b>AS 2161</b>
Industrial Clothing:	<b>AS2919</b>
Industrial Eye Protection:	<b>AS1336</b> and <b>AS/NZS 1337</b>
Occupational Protective Footwear:	<b>AS/NZS2210</b>

<b>ASCC Exposure limits</b>	<b>TWA (mg/m3)</b>	<b>STEL (mg/m3)</b>
-----------------------------	--------------------	---------------------

Exposure limits have not been established by ASCC for any of the significant ingredients in this product.

The ADI for Trifluralin is set at 0.02mg/kg/day. The corresponding NOEL is set at 2.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2006.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

### **Ventilation:**

No special ventilation requirements are normally necessary for this product. However make sure that

the work environment remains clean and that vapours and mists are minimised.

### **Eye Protection:**

Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

### **Skin Protection:**

If you believe you may have a sensitisation to this product or any of its declared ingredients, you should prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

### **Protective Material Types:**

We suggest that protective clothing be made from the following materials: rubber, PVC.

### **Respirator:**

Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical Description &amp; colour:</b>	Orange coloured liquid.
<b>Odour:</b>	Hydrocarbon odour.
<b>Boiling Point:</b>	Not available.
<b>Freezing/Melting Point:</b>	No specific data. Liquid at normal temperatures.
<b>Volatiles:</b>	No data.
<b>Vapour Pressure:</b>	No data.
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	Approx 1.08 at 20°C
<b>Water Solubility:</b>	Emulsifiable in water.
<b>pH:</b>	No data.

# MATERIAL SAFETY DATA SHEET

**Volatility:** No data.  
**Odour Threshold:** No data.  
**Evaporation Rate:** No data.  
**Coeff Oil/water distribution:** No data  
**Autoignition temp:** No data.

## **10. STABILITY AND REACTIVITY**

### **Reactivity:**

This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

### **Incompatibilities:**

Strong acids, strong bases, strong oxidising agents.

### **Fire Decomposition:**

Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Hydrogen fluoride gas and other compounds of fluorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

### **Polymerisation:**

This product will not undergo polymerisation reactions.

## **11. TOXICOLOGICAL INFORMATION**

### **ACUTE TOXICITY**

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 5000 mg/kg, and in dogs, rabbits, and chickens, is greater than 2000 mg/kg. However, certain formulated products that contain Trifluralin may be more toxic than the technical material itself. The dermal LD50 for technical Trifluralin in rabbits is greater than 2000 mg/kg. The 1-hour inhalation LC50 for technical Trifluralin in rats is greater than 2.8 mg/L.

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.

### **EFFECTS OF ACUTE 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 [8]. Skin sensitization (allergies) may occur in some individuals [8]. Inhalation may cause irritation of the lining of the mouth, throat, or lungs.

### **EFFECT OF LONG TERM EXPOSURE**

#### **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

# MATERIAL SAFETY DATA SHEET

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/kg/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.

## **12. ECOLOGICAL INFORMATION**

### **ECOTOXICITY DATA**

#### **Effects on birds:**

Trifluralin is practically nontoxic to birds. The LD50 in bobwhite quail is greater than 2000 mg/kg, as it is in female mallards and pheasants. These values are for the technical product.

#### **Effects on aquatic organisms:**

Trifluralin is very highly toxic to fish and other aquatic organisms. The 96-hour LC50 is 0.02 to 0.06 mg/L in rainbow trout, and 0.05 to 0.07 mg/L in bluegill sunfish. The 96-hour LC50 in channel catfish is approximately 1.4 to 3.4 mg/L. Variables such as temperature, pH, life stage, or size may affect the toxicity of the compound. Trifluralin is highly toxic to Daphnia, a species of small freshwater crustacean, with a 48-hour LC50 of 0.5 to 0.6 mg/L. The compound shows a moderate tendency to accumulate in aquatic organisms.

#### **Effects on other organisms:**

At exposure levels well above permissible application rates (100 mg/kg), Trifluralin has been shown to be toxic to earthworms. However, permitted application rates will result in soil residues of approximately 1 ppm Trifluralin, a level that had no adverse effects on earthworms. It is nontoxic to bees.

### **ENVIRONMENTAL FATE**

#### **Breakdown in soil and groundwater:**

Trifluralin is of moderate to high persistence in the soil environment, depending on conditions. Trifluralin is subject to degradation by soil microorganisms. Trifluralin remaining on the soil surface after application may be decomposed by UV light or may volatilize. Reported half-lives of Trifluralin in the soil vary from 45 to 60 days to 6 to 8

# MATERIAL SAFETY DATA SHEET

months. After 6 months to 1 year, 80 to 90% of its activity will be gone. It is strongly adsorbed on soils and nearly insoluble in water. Because adsorption is highest in soils high in organic matter or clay content and adsorbed herbicide is inactive, higher application rates may be required for effective weed control on such soils. Trifluralin has been detected in nearly 1% of the 5590 wells tested. However, it has been detected at very low concentrations, typically ranging from 0.002 µg/L to 15 µg/L.

## **Breakdown in water:**

Trifluralin is nearly insoluble in water. It will probably be found adsorbed to soil sediments and particulates in the water column.

## **Breakdown in vegetation:**

Trifluralin inhibits the growth of roots and shoots when it is absorbed by newly germinated weed seedlings. Trifluralin residues in crop plants will occur only in root tissues which are in direct contact with contaminated soil. Trifluralin is not translocated into the leaves, seeds, or fruit of most plants. On most crops, Trifluralin applied to the leaves has no effect, but on certain crops, such as tobacco and summer squash, leaf distortion may occur.

## **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. Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

## **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.

<b>Hazchem Code</b>	Not allocated.
<b>U.N. Number</b>	3082
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIFLURALIN 480G/L)
<b>IMO Class</b>	9
<b>Packing Group</b>	III

## **15. REGULATORY INFORMATION**

<b>Poisons Schedule:</b>	S5
<b>Packaging &amp; Labelling:</b>	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
<b>AICS (Australia):</b>	All of the components in this product are listed on the Australian Inventory of Chemical Substances.

# MATERIAL SAFETY DATA SHEET

## **16. OTHER INFORMATION**

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

All due care and skill, so far as practicable, has been applied in the preparation and collation of the information in this MSDS. Each user of the Product named in this MSDS should read and consider the information contained in this MSDS in the context of how the Product will be stored, handled, used or applied in the workplace. In all circumstances, it is the responsibility of the user of the Product to ensure that they have sought out the relevant safety data appropriate to their particular situation. Nothing contained in this MSDS shall be construed as a representation or recommendation to the user about the suitability or otherwise of the Product named in this MSDS for the user's particular situation. If the user requires any clarification or further information, the user should contact Sanonda (Australia) Pty Ltd.

### **CONTACT POINT:**

**Sanonda (Australia) Pty Ltd**

Suite 822, St Kilda Road Towers,

No.1 Queens Road, Melbourne, VIC 3004

**Telephone:** 03 9863 8081

**Facsimile:** 03 9863 8083

**National Poisons Information Centre: Dial 13 11 26 (from anywhere in Australia).**

**Please read all labels and booklets carefully before using product.**