

# MATERIAL SAFETY DATA SHEET

## FOX 500 EC

### 1. PRODUCT IDENTIFICATION

**Product Name** : Fox 500 EC Herbicide  
**Active ingredient** : Fluroxypyr-methylheptyl ester 500 g/l  
**Molecular Formula** :  $C_{15}H_{21}Cl_2FN_2O_3$   
**Formula weight** : 367.24

#### COMPANY IDENTIFICATION:

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### 2. HAZARDOUS IDENTIFICATIONS

#### EMERGENCY OVERVIEW

Classified as hazardous according to the criteria of NOHSC

Not Classified as Dangerous Goods for Land Transport in receptacles not exceeding 500L or IBCs (see Section 14)

**Potential Health Effects** : May irritate eyes and skin. May cause allergic disorders.

#### RISK PHRASES

R36/38 : Irritating to eyes and skin.  
R43 : May cause sensitisation by skin contact.  
R50 : Very toxic to aquatic organisms.

#### SAFETY PHRASES

S2 : Keep out of the reach of children.  
S20/21 : When using do not eat, drink or smoke.

- S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection.
- S62 : If swallowed, do not induce vomiting: seek medical advice immediately and show the container or label.
- S29/56 : Do not empty into drains; dispose of this material and its container at hazardous or special waste collection point.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Cas No	Proportion
Fluroxypyr-methylheptyl ester	81406-37-3	500 g/l
Inert ingredient	-	up to 1 liter

### 4. FIRST AID

**Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.**

- EYE** : Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes and then continue rinsing eyes. Call the Poisons Information Centre or doctor for treatment advice.
- SKIN** : Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call the Poisons Information Centre or doctor for treatment advice. Items which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands should be disposed of properly.
- INGESTION** : Immediately call the Poisons Information Centre or doctor for treatment advice. Do not induce vomiting unless told to do so by the Poisons Information Centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
- INHALATION** : Move person to fresh air. If person is not breathing, call doctor or an ambulance and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). If breathing is difficult, oxygen should be administered by qualified personnel.

**NOTE TO DOCTOR :** Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. Skin contact may aggravate preexisting dermatitis. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 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 of water stream on hot liquids. Fire decomposition products from this product are likely to be toxic and corrosive if inhaled. Take appropriate protective measures.
- Suitable extinguishing Media** : Water fog or fine spray. Dry chemical fire extinguishers, Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
- Extinguishing Media to Avoid** : Do not use direct water stream. May spread fire.
- Fire Fighting** : If a significant quantity of this product is involved in a fire, call the fire brigade.
- Flash point** : 67°C (Pensky Martin closed cup)
- Autoignition temperature** : No data.
- Flammability Class:** C1

## 6. ACCIDENTAL RELEASE MEASURES

- Accidental release** : In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls, goggles and gloves. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective glasses and,

preferably, goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways.

Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly.

Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services.

Full details regarding disposal of used containers, spillage and Unused material may be found on the label.

If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## **7. HANDLING AND STORAGE**

- Precautions for Safe Handling** : Ensure containers are kept closed until using product. Sensitive workers should use protective clothing. When opening the container, preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles. After each day's use, wash gloves, face shield or goggles and contaminated clothing. Wash hands after use.
- Conditions for Safe Storage** : DO NOT store near (or allow to contact) fertilizers, fungicides or pesticides. Store in the closed original container, in a cool well ventilated area, out of direct sunlight. Store in a room or place away from children, animals, food, feed stuffs, seed and fertilizers. Not classified as a Dangerous Good. This product is a Schedule 5 Poison (S5) and must be stored, transported and sold in accordance with the relevant Health Department regulations. This product is 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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Standards

Exposure guidelines have not been established for this product by safe Work Australia. However, the manufacturer of the solvent has recommended the following occupational exposure limit:

Atmospheric Contaminant	Exposure Standard (TWA)	STEL
Total hydrocarbon	100 mg/m <sup>3</sup> (17 ppm)	-

*TWA : Time Weight Average      STEL : Short term Exposure Limit*

**Biological Limit Value** : No biological limit allocated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls** : Use in ventilated areas only. Use local exhaust at all process locations. Ventilate all transport vehicles prior to unloading. Keep containers closed when not in use.
- Personal Protective Equipment (PPE)** : General: When opening the container, preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles. After each day's use, wash gloves, face shield or goggles and contaminated clothing. Wash hands after use. Respiratory Protection: Generally not required. Use of a respirator may be required in certain circumstances. If an inhalation risk exists, wear a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides. Personal Hygiene: Will irritate the eyes and skin. Avoid contact with eyes and skin. Sensitive workers should use protective clothing. Clean water should be available for washing in case of eye or skin contamination. Wash skin before eating, drinking or smoking. Shower at the end of the workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	: Clear Yellow liquid.
<b>Odour</b>	: Typical solvent odour.
<b>Boiling Point</b>	: 237°C (solvent solvesso 200).
<b>Specific Gravity</b>	: 1.02 - 1.15 (Nufarm Indonesia)
<b>pH 1% (H<sub>2</sub>O)</b>	: 4.5 - 6.1 (Nufarm Indonesia)
<b>Vapour Pressure @ 27°C</b>	: 0.02 mPa @ 20°C (Fluroxypyr).
<b>Flash Point</b>	: 66°C.
<b>Vapour Pressure</b>	: 135x10 <sup>-3</sup> mPa (Fluroxypyr methylheptyl ester)
<b>Water Solubility</b>	: Emulsifiable.

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.
<b>Conditions to avoid</b>	: Do not store for prolonged periods in direct sunlight. Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.
<b>Reactivity</b>	: No dangerous reaction known under conditions of normal use.
<b>Incompatible materials</b>	: Keep away from strong oxidising agents.
<b>Hazardous decomposition products</b>	: May emit toxic fumes of hydrogen chloride, hydrogen fluoride or phosgene if involved in fires or exposed to extreme heat.
<b>Fire Decomposition</b>	: 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 chloride gas, other compounds of chlorine. 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

**Toxicity** : Acute toxicity. Fluroxypyr MHE has low acute toxicity. The rat oral LD50 is >5000 mg/kg, the rabbit dermal LD50 is > 2000 mg/kg, and the rat inhalation LC50 is >1.0 mg/l, the maximum attainable concentration. Fluroxypyr MHE is not a skin sensitizer in guinea pigs, has no dermal irritation in rabbits, and shows mild ocular irritation in rabbits.

**Genotoxicity** : Studies show a lack of genotoxicity.

**Reproductive and Developmental toxicity** : Studies show that Fluroxypyr and Fluroxypyr MHE are not teratogenic nor will they interfere with in utero development.

**Subchronic toxicity** : Fluroxypyr MHE showed a NOEL of 1,000 mg/ kg/day in a 90-day rat dietary study and a 21- day rabbit dermal study. Ninety day feeding studies with Fluroxypyr showed NOELs of 80 mg/kg/day (Wistar rats), 700 mg/kg/day (Fischer 344 rats), 1342 mg/kg/day (male mice), and 1,748 mg/kg/day (female mice). In a 4-week dietary, range finding study with Fluroxypyr in dogs the NOEL was >50 mg/kg/day.

**Chronic toxicity** : NOELs found in chronic dietary studies are as follows: 150 mg/kg/day (dog), 300 mg/kg/day (mouse), 80 mg/kg/day (Wistar rats), 100 mg/kg/day (male Fischer 344 rats), and 500 mg/kg/day (female Fischer 344 rats).

**Animal metabolism** : Studies show that Fluroxypyr MHE is rapidly hydrolyzed and the fate of the hydrolysis products, Fluroxypyr and 1-methylheptanol are independent of whether they were given as the ester or the acid. Fluroxypyr, per se, was extensively absorbed and rapidly excreted principally unchanged in the urine. 1-Methylheptanol also was rapidly absorbed and rapidly eliminated. Repeated administration of Fluroxypyr MHE was not associated With accumulation in tissues. Also, the metabolism and pharmacokinetics of methylheptanol are comparable to that of the methylheptyl portion of Fluroxypyr MHE.

**Carcinogenicity** : There was no evidence of carcinogenicity in an 18-month mouse feeding study and a 24-month rat feeding study at all dosages tested. The NOELs shown in the mouse and rat oncogenicity studies were 1,000 and 320 mg/ kg/day, respectively.

## 12. ECOLOGICAL INFORMATION

- Environmental Toxicology** : The following information refers to the active ingredient, fluroxypyr meptyl. Low toxicity to upland game birds (Bobwhite quail LD50 > 2000 mg/kg). Mallard duck LD50 > 2,000 mg/kg. Low toxicity to fish due to the low solubility of fluroxypyr meptyl (~0.9 mg/L). Bees: Oral LD50 > 100 mg/bee, Contact LD50 > 100 mg/bee. LC50 (14 days) for earthworms > 1000 mg/kg. Half life in soils is typically 153 days. DO NOT contaminate streams, rivers or water courses.
- Environmental Properties** : The following information refers to the active ingredient, fluroxypyr meptyl. The product is not persistent. Half-life time ( $t_{1/2}$ ): < 7 days (fluroxypyr meptyl). Degradation is primarily via: hydrolysis. Water: DT50 = 1-3 days.

## 13. DISPOSAL CONSIDERATIONS:

- Spills & Disposal** : Isolate and post spill area. Wear prescribed protective clothing and equipment. Large spills should be dyked or covered to prevent dispersal. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents.
- Disposal of empty Containers** : Triple or preferably pressure rinse containers before disposal. Add rinsings to tank mix. Do not dispose of undiluted chemicals on-site. If not recycling, break, crush, or puncture and deliver empty packaging for appropriate disposal 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.



#### 14. TRANSPORT INFORMATION

**Transport Information** : It is a good practice to separate this product from food, food related material, animal feedstuffs, seed or fertilizers during transport.

**Sea and air transport** : Classified as dangerous goods for transport by sea and air in accordance with the International Maritime Dangerous Goods Code (IMDG) and the International Air Transport Association (IATA) Dangerous Goods Regulation.

**UN No** : 3082

**Class** : 9

**Packing group** : III

**SHIPPING NAME** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S (FLUROXYPYR MEPTYL)

**Marine pollutant** : Yes

#### 15. REGULATORY INFORMATION

**Risk Phrase** : N/A

**Safety Phrase** : N/A

**Poisons Schedule** : No data

**Hazard Category** : Class III (Indonesia Regulatory)

**Packing and Labeling** : HARMFUL  
KEEP AWAY FROM FOODSTUFF AND CHILDREN  
READ THE LABEL BEFORE USE

#### 16. OTHER INFORMATION

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of the way the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company