

**Product Name:** TIMBREL Herbicide MAFF 05815/PCS 91423

**Revision Date:** 2009/06/01

**Print Date:** 23 Aug 2010

Dow AgroSciences Limited encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. Identification of the substance/preparation and of the company/undertaking

**Product Name**

TIMBREL Herbicide MAFF 05815/PCS 91423

**COMPANY IDENTIFICATION**

Dow AgroSciences Limited  
A Subsidiary of The Dow Chemical Company  
Latchmore Court, Brand Street  
SG5 1NH Hitchin  
United Kingdom

For questions about this SDS, contact: SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:**

+44 (0) 1553 761 251

**Local Emergency Contact:**

00 44 155 37 61 251

## 2. Hazards Identification

Harmful if swallowed.

Irritating to skin.

May cause sensitization by skin contact.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Harmful: May cause lung damage if swallowed.

## 3. Composition/information on ingredients

Component	Amount	Classification:	CAS #	EC #
Triclopyr-2-butoxyethyl ester	61.6 %	Xn: R22; R43; N: R50/53	64700-56-7	265-024-8
Kerosine (petroleum); Straight run kerosine	> 30.0 - < 40.0 %	Xn: R65	8008-20-6	232-366-4

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See Section 16 for full text of R-phrases.

## 4. First-aid measures

**Eye Contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Call a physician and/or transport to emergency facility immediately.

**Skin Contact:** Remove contaminated clothing and wash before reuse. Call a physician and/or transport to emergency facility immediately. Wash contaminated clothing before reuse. Immediately wash skin with soap and plenty of water.

**Inhalation:** Call a physician and/or transport to emergency facility immediately. Remove to fresh air if effects occur. Consult a physician.

**Ingestion:** Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

**Notes to Physician:** Notes to Physician If lavage is performed, suggest endotracheal and/or esophageal 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. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**Medical Conditions Aggravated by Exposure:** Skin contact may aggravate preexisting dermatitis.

## 5. Fire Fighting Measures

**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.

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

**Hazardous Combustion Products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phosgene. Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

## 6. Accidental Release Measures

**Steps to be Taken if Material is Released or Spilled:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance.

**Personal Precautions:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

## 7. Handling and Storage

### Handling

**General Handling:** Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.

### Storage

Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

## 8. Exposure Controls / Personal Protection

### Exposure Limits

Component	List	Type	Value
<b>Kerosine (petroleum); Straight run kerosine</b>	Dow IHG	TWA as total hydrocarbon vapor	10 mg/m <sup>3</sup> SKIN
	ACGIH	TWA Non-aerosol. as total hydrocarbon vapor	200 mg/m <sup>3</sup> P: Application restricted to conditions in which there are negligible aerosol exposures.
<b>Triclopyr-2-butoxyethyl ester</b>	Dow IHG	TWA	2 mg/m <sup>3</sup> D-SEN

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

A D-SEN notation following the exposure guideline refers to the potential to produce dermal sensitization, as confirmed by human or animal data.

### Personal Protection

**Eye/Face Protection:** Use safety glasses. Safety glasses should be consistent with EN 166 or equivalent.

**Skin Protection:** Wash contaminated clothing before reuse.

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier

materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

### Engineering Controls

**Ventilation:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

## 9. Physical and Chemical Properties

<b>Physical State</b>	Liquid.
<b>Color</b>	Yellow
<b>Odor</b>	Gasoline-like
<b>Flash Point - Closed Cup</b>	65.5 °C <i>Pensky-Martens Closed Cup ASTM D 93</i>
<b>Flash Point - Open Cup</b>	95.6 °C <i>Open Cup</i>
<b>Flammable Limits In Air</b>	<b>Lower:</b> No test data available <b>Upper:</b> No test data available
<b>Autoignition Temperature</b>	238 °C
<b>Vapor Pressure</b>	No test data available
<b>Boiling Point (760 mmHg)</b>	No test data available.
<b>Vapor Density (air = 1)</b>	No test data available
<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	1.079 23 °C/4 °C <i>OECD 109</i>
<b>Freezing Point</b>	No test data available
<b>Melting Point</b>	No test data available
<b>Solubility in water (by weight)</b>	emulsifiable
<b>pH</b>	6.4 (@ 1 g/l) <i>pH Electrode</i> 5.3 (@ 100 g/l) <i>pH Electrode</i>
<b>Decomposition Temperature</b>	No test data available
<b>Dynamic Viscosity</b>	12.1 mPa.s @ 20 °C
<b>Kinematic Viscosity</b>	11.2 cSt

## 10. Stability and Reactivity

### Stability/Instability

Thermally stable at typical use temperatures.

**Conditions to Avoid:** Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible Materials:** Avoid contact with: Acids. Bases. Oxidizers.

**Hazardous Polymerization**

Will not occur.

**Thermal Decomposition**

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Nitrogen oxides. Phosgene. Toxic gases are released during decomposition.

**11. Toxicological Information****Acute Toxicity****Ingestion**

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD<sub>50</sub>, Rat 1,338 mg/kg

**Aspiration hazard**

Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

**Eye Contact**

May cause moderate eye irritation. Corneal injury is unlikely. May cause pain disproportionate to the level of irritation to eye tissues.

**Skin Contact**

Brief contact may cause moderate skin irritation with local redness. Repeated contact may cause severe skin irritation with local redness and discomfort. May cause drying and flaking of the skin.

**Skin Absorption**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD<sub>50</sub>, Rabbit > 2,000 mg/kg

**Inhalation**

Mist may cause irritation of upper respiratory tract (nose and throat).

LC<sub>50</sub>, 4 h, Aerosol, Rat > 5.2 mg/l

No deaths occurred at this concentration.

**Sensitization****Skin**

Has caused allergic skin reactions when tested in guinea pigs. With the dilute mix, no allergic skin reaction is expected.

**Repeated Dose Toxicity**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Chronic Toxicity and Carcinogenicity**

Active ingredient did not cause cancer in laboratory animals. In a lifetime animal dermal carcinogenicity study, an increased incidence of skin tumors was observed when kerosene was applied at doses that also produced skin irritation. This response was similar to that produced in skin by other types of chronic chemical/physical irritation. No increase in tumors was observed when non-irritating dilutions of kerosene were applied at equivalent doses, indicating that kerosene is unlikely to cause skin cancer in the absence of long-term continued skin irritation.

**Developmental Toxicity**

For similar active ingredient(s). Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For similar active ingredient(s). Did not cause birth defects in laboratory animals. For kerosene: Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive Toxicity**

For similar active ingredient(s). In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For kerosene: Limited data in laboratory animals suggest that the material does not affect reproduction.

**Genetic Toxicology**

Contains a component(s) which were negative in In Vitro genetic toxicity studies. Contains component(s) which were negative in animal genetic toxicity studies.

## 12. Ecological Information

### ENVIRONMENTAL FATE

Data for Component: **Triclopyr-2-butoxyethyl ester**

#### Movement & Partitioning

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient, n-octanol/water (log Pow):** 4.09 - 4.49 Measured

#### Persistence and Degradability

Chemical degradation (hydrolysis) is expected in the environment. Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

#### Stability in Water (1/2-life):

12 h; 25 °C; pH 6.7

#### OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
18 %	28 d	OECD 301B Test

Data for Component: **Kerosine (petroleum); Straight run kerosine**

#### Movement & Partitioning

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient, n-octanol/water (log Pow):** 3.3 - 6 Estimated.

**Bioconcentration Factor (BCF):** 61 - 159; fish

#### Persistence and Degradability

Material is expected to be readily biodegradable.

### ECOTOXICITY

Material is very toxic to aquatic organisms (LC<sub>50</sub>/EC<sub>50</sub>/IC<sub>50</sub> below 1 mg/L in the most sensitive species). Material is slightly toxic to birds on an acute basis (LD<sub>50</sub> between 501 and 2000 mg/kg).

#### Fish Acute & Prolonged Toxicity

LC<sub>50</sub>, rainbow trout (*Oncorhynchus mykiss*), flow-through, 96 h: 0.984 mg/l

#### Aquatic Invertebrate Acute Toxicity

EC<sub>50</sub>, water flea *Daphnia magna*, flow-through, 48 h: 0.35 mg/l

#### Aquatic Plant Toxicity

EbC<sub>50</sub>, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), 72 h: 10.6 mg/l

#### Toxicity to Non-mammalian Terrestrial Species

oral LD<sub>50</sub>, bobwhite (*Colinus virginianus*): 1350 mg/kg bodyweight.

oral LD<sub>50</sub>, Honey bee (*Apis mellifera*): > 229.4 micrograms/bee

contact LD<sub>50</sub>, Honey bee (*Apis mellifera*): > 229.4 micrograms/bee

#### Toxicity to Soil Dwelling Organisms

LC<sub>50</sub>, Earthworm *Eisenia foetida*, adult, 14 d: 2,552 mg/kg

## 13. Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with

applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

## 14. Transport Information

### ROAD & RAIL

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

**Technical Name:** Triclopyr

**Hazard Class:** 9 **ID Number:** UN3082 **Packing Group:** PG III

**Classification:** M6

**Kemler Code:** 90

**Tremcard Number:** 90GM6-III

### OCEAN

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

**Technical Name:** Triclopyr

**Hazard Class:** 9 **ID Number:** UN3082 **Packing Group:** PG III

**EMS Number:** F-A,S-F

**Marine pollutant.:** Yes

### AIR

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

**Technical Name:** Triclopyr

**Hazard Class:** 9 **ID Number:** UN3082 **Packing Group:** PG III

**Cargo Packing Instruction:** 914

**Passenger Packing Instruction:** 914

### INLAND WATERWAYS

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

**Technical Name:** Triclopyr

**Hazard Class:** 9 **ID Number:** UN3082 **Packing Group:** PG III

**Classification:** M6

**Kemler Code:** 90

**Tremcard Number:** 90GM6-III

## 15. Regulatory Information

### European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

### EC Classification and User Label Information

#### Hazard Symbol:

Xn - Harmful.

N - Dangerous for the environment.

#### Risk Phrases :

R22 - Harmful if swallowed.

R38 - Irritating to skin.

R43 - May cause sensitization by skin contact.

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 - Harmful: May cause lung damage if swallowed.

**Safety Phrases :**

S24 - Avoid contact with skin.

S35 - This material and its container must be disposed of in a safe way.

S37 - Wear suitable gloves.

S57 - Use appropriate containment to avoid environmental contamination.

S62 - If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

To avoid risks to man and the environment, comply with the instructions for use.

Refer to the Product Label for full Local Regulatory Authority label precautions.

PR- Number: MAFF 05815/PCS No. 91423

**16. Other Information****Risk-phrases in the Composition section**

R22	Harmful if swallowed.
R43	May cause sensitization by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: May cause lung damage if swallowed.

**Revision**

Identification Number: 53753 / 3027 / Issue Date 2009/06/01 / Version: 3.2

DAS Code: XRM-4714

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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