**SAFETY DATA SHEET**

DOW AGROSCIENCES LIMITED

Safety Data Sheet according to Reg. (EU) No 453/2010

Product name: BLASTER™ PRO Herbicide

Revision Date: 31.10.2014

Version: 2.1

Print Date: 17.11.2014

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.

**SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

1.1 Product identifiers

Product name: BLASTER™ PRO Herbicide

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Plant Protection Product

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION
DOW AGROSCIENCES LIMITED
LATCHMORE COURT
BRAND STREET
HITCHIN
England
SG5 1NH
UNITED KINGDOM

Customer Information Number: SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 0031 115 694 982

Local Emergency Contact: 00 31 115 69 4982

**SECTION 2. HAZARDS IDENTIFICATION**

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:

- Flammable liquids - Category 3 - H226
- Skin irritation - Category 2 - H315
- Eye irritation - Category 2 - H319
- Skin sensitisation - Category 1B - H317
- Specific target organ toxicity - single exposure - Category 3 - Inhalation - H335
- Specific target organ toxicity - single exposure - Category 3 - Inhalation - H336
- Aspiration hazard - Category 1 - H304
Chronic aquatic toxicity - Category 2 - H411  
For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC:**

Harmful - R65  
Irritant - R36/37/38  
R43  
R67  
Dangerous for the environment - R51/53  
For the full text of the R-phrases mentioned in this Section, see Section 16.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008:**

**Hazard pictograms**

![Hazard pictograms](image)

**Signal word: DANGER**

**Hazard statements**

- H226 Flammable liquid and vapour.  
- H315 Causes skin irritation.  
- H319 Causes serious eye irritation.  
- H317 May cause an allergic skin reaction.  
- H335 May cause respiratory irritation.  
- H336 May cause drowsiness or dizziness.  
- H304 May be fatal if swallowed and enters airways.  
- H411 Toxic to aquatic life with long lasting effects.

**Supplemental Hazard Statements**

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

**Precautionary statements**

- 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.  
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
- P331 Do NOT induce vomiting.  
- P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

**Contains**

- Triclopyr-2-butoxyethyl ester; Hydrocarbons, C9, aromatics; Hydrocarbons, C10-C13, aromatics, <1% naphthalene
2.3 Other hazards
no data available

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

This product is a mixture.

<table>
<thead>
<tr>
<th>CASRN / EC-No. / Index-No.</th>
<th>REACH Registration Number</th>
<th>Concentration</th>
<th>Component</th>
<th>Classification: REGULATION (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASRN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64700-56-7</td>
<td></td>
<td>32.5%</td>
<td>Triclopyr-2-butoxyethyl ester</td>
<td>Acute Tox. - 4 - H302  Skin Sens. - 1B - H317  Aquatic Acute - 1 - H400  Aquatic Chronic - 1 - H410</td>
</tr>
<tr>
<td>265-024-8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.8%</td>
<td>clopyralid (ISO)</td>
<td>Eye Dam. - 1 - H318</td>
</tr>
<tr>
<td>CASRN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1702-17-6</td>
<td></td>
<td>&gt; 40.0 - &lt; 50.0 %</td>
<td>Hydrocarbons, C9, aromatics</td>
<td>Flam. Liq. - 3 - H226  STOT SE - 3 - H336  STOT SE - 3 - H335  Asp. Tox. - 1 - H304  Aquatic Chronic - 2 - H411</td>
</tr>
<tr>
<td>216-935-4</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>607-231-00-1</td>
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</tr>
<tr>
<td>Not available</td>
<td></td>
<td>&gt; 10.0 %</td>
<td>N,N-Dimethyloctanamide</td>
<td>Skin Irrit. - 2 - H315  Eye Dam. - 1 - H318</td>
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<tr>
<td>918-668-5</td>
<td></td>
<td></td>
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<tr>
<td>CASRN</td>
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</tr>
<tr>
<td>1118-92-9</td>
<td></td>
<td>&gt; 5.0 %</td>
<td>Hydrocarbons, C10-C13, aromatics, &lt;1% naphthalene</td>
<td>Asp. Tox. - 1 - H304  Aquatic Chronic - 2 - H411</td>
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<td>214-272-5</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>not available</td>
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If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components.

For the full text of the H-Statements mentioned in this Section, see Section 16.

<table>
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<tr>
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<th>EC-No.</th>
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<th>Concentration</th>
<th>Component</th>
<th>Classification: 67/548/EEC</th>
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<td>01-2119964467-24</td>
<td></td>
<td></td>
<td>&lt; 5.0 %</td>
<td>Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts</td>
<td>Acute Tox. - 4 - H312, Skin Irrit. - 2 - H315, Eye Dam. - 1 - H318, Aquatic Chronic - 2 - H411</td>
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<td>68953-96-8</td>
<td>273-234-6</td>
<td></td>
<td>&lt; 5.0 %</td>
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<td>R10, Xn - R65, Xi - R37, R66, R67, N - R51/53</td>
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<td>Xi - R38 - R41</td>
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For the full text of the R-phrases mentioned in this Section, see Section 16.

**SECTION 4. FIRST AID MEASURES**

4.1 Description of first aid measures
**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

**Skin contact:** Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

**Eye contact:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3 Indication of any immediate medical attention and special treatment needed
**Notes to physician:** Skin contact may aggravate preexisting dermatitis. Maintain adequate ventilation and oxygenation of the patient. 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. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

**SECTION 5. FIREFIGHTING MEASURES**

5.1 Extinguishing media
**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.
Unsuitable extinguishing media: no data available

5.2 Special hazards arising from the substance or mixture
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: Carbon monoxide. Carbon dioxide.

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. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.

5.3 Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. 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. Eliminate ignition sources. 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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: No smoking in area. Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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

6.3 Methods and materials for containment and cleaning up: 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. Pump with explosion-proof equipment. If available, use foam to smother or suppress. See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections: References to other sections, if applicable, have been provided in the previous sub-sections.
SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 Conditions for safe storage, including any incompatibilities: 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. Minimize sources of ignition, such as static build-up, heat, spark or flame. Avoid temperatures above 40°C (104°F)

7.3 Specific end use(s): Refer to product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Exposure limits are listed below, if they exist.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triclopyr-2-butoxyethyl ester</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>2 mg/m3</td>
</tr>
<tr>
<td>Clopyralid (ISO)</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>10 mg/m3</td>
</tr>
</tbody>
</table>

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.

8.2 Exposure controls
Engineering controls: 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.

Individual protection measures
Eye/face protection: Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.
Skin protection
Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber (“latex”). Neoprene. Nitrile/butadiene rubber (“nitrile” or “NBR”). Polyvinyl chloride (“PVC” or “vinyl”). 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.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**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, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply.

Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

**Environmental exposure controls**

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**

**Appearance**

- **Physical state:** Liquid.
- **Color:** Yellow
- **Odor:** Aromatic
- **Odor Threshold:** No test data available
- **pH:** 2.04 *pH Electrode* (neat)
- **Melting point/range:** Not applicable
- **Freezing point:** No test data available
- **Boiling point (760 mmHg):** No test data available
- **Flash point:** closed cup 55.1 °C *Pensky-Martens Closed Cup ASTM D 93*
- **Evaporation Rate (Butyl Acetate = 1):** No test data available
- **Flammability (solid, gas):** Not applicable to liquids
- **Lower explosion limit:** No test data available
- **Upper explosion limit:** No test data available
- **Vapor Pressure:** No test data available
- **Relative Vapor Density (air = 1):** No test data available
- **Relative Density (water = 1):** 1.032 at 20 °C / 4 °C *Digital Density Meter (Oscillating Coil)*
- **Water solubility:** emulsifiable
- **Partition coefficient: n-octanol/water:** no data available
- **Auto-ignition temperature:** No test data available
- **Decomposition temperature:** No test data available
Kinematic Viscosity  no data available
Explosive properties  No
Oxidizing properties  no data available

9.2 Other information
Molecular weight  no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: No dangerous reaction known under conditions of normal use.

10.2 Chemical stability: Unstable at elevated temperatures.

10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid. Avoid direct sunlight.

10.5 Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

10.6 Hazardous decomposition products: 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.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

11.1 Information on toxicological effects
Acute toxicity

Acute oral toxicity
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.

As product:
LD50, rat, female, 3,129 mg/kg

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

As product:
LD50, rat, male and female, > 5,000 mg/kg
Acute inhalation toxicity
Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness.
As product: The LC50 has not been determined.

Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness.

Serious eye damage/eye irritation
May cause moderate eye irritation which may be slow to heal.
May cause slight corneal injury.

Sensitization
Has demonstrated the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

May cause drowsiness or dizziness.
Route of Exposure: Inhalation

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active ingredient(s):
Triclopyr butoxyethyl ester.
In animals, effects have been reported on the following organs:
Kidney.
Liver.

Contains component(s) which have been reported to cause effects on the following organs in animals:
Blood.
Kidney.
Liver.
Eye.
Respiratory tract.

Carcinogenicity
For the minor component(s): Cumene. Has caused cancer in laboratory animals. However, the relevance of this to humans is unknown.

For the active ingredient(s): Did not cause cancer in laboratory animals.

Teratogenicity
For the active ingredient(s): Triclopyr butoxyethyl ester. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.
Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

For the solvent(s): Has caused birth defects in lab animals only at doses producing severe toxicity in the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity
For similar active ingredient(s): Triclopyr. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

For the active ingredient(s): Clopyralid. In animal studies, did not interfere with reproduction.

Mutagenicity
For the active ingredient(s): In vitro genetic toxicity studies were negative. Genetic toxicity studies in animals were negative for component(s) tested.

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

May be fatal if swallowed and enters airways.

COMPONENTS INFLUENCING TOXICOLOGY:

Triclopyr-2-butoxyethyl ester

Acute inhalation toxicity
Prolonged exposure is not expected to cause adverse effects. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed.

LC50, rat, 4 Hour, dust/mist, > 4.8 mg/l The LC50 value is greater than the Maximum Attainable Concentration.

clopyralid (ISO)

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed. Based on the available data, narcotic effects were not observed.

As product: LC50, rat, 4 Hour, Dust, > 1 mg/l

No deaths occurred at this concentration. The LC50 value is greater than the Maximum Attainable Concentration.

Hydrocarbons, C9, aromatics

Acute inhalation toxicity
Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness.

LC50, rat, 4 Hour, > 10.2 mg/l

N,N-Dimethyloctanamide
Acute inhalation toxicity
Prolonged excessive exposure to mist may cause adverse effects. Excessive exposure may cause severe irritation to upper respiratory tract (nose and throat) and lungs.

For similar material(s): LC50, rat, male and female, 4 Hour, dust/mist, > 3.551 mg/l

Hydrocarbons, C10-C13, aromatics, <1% naphthalene
Acute inhalation toxicity
Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: The LC50 has not been determined.

For similar material(s): LD50, rat, dust/mist, > 4.778 mg/l

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts
Acute inhalation toxicity
The LC50 has not been determined.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

12.1 Toxicity
Acute toxicity to fish
Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 1.47 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 21.6 mg/l

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 16.6 mg/l

ErC50, Lemna gibba, Growth inhibition, 7 d, 61.1 mg/l

Toxicity to Above Ground Organisms
Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

oral LD50, Colinus virginianus (Bobwhite quail), 14 d, 1,156 mg/kg
oral LD50, Apis mellifera (bees), 48 Hour, > 370µg/bee
contact LD50, Apis mellifera (bees), 48 Hour, > 413µg/bee

Toxicity to soil-dwelling organisms
12.2 Persistence and degradability

**Triclopyr-2-butoxyethyl ester**

- **Biodegradability**: Chemical degradation (hydrolysis) is expected in the environment. Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
- **10-day Window**: Fail
- **Biodegradation**: 18%
- **Exposure time**: 28 d
- **Method**: OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand**: 1.21 mg/mg

**Biological oxygen demand (BOD)**

<table>
<thead>
<tr>
<th>Incubation Time</th>
<th>BOD</th>
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<tr>
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<td>0.004 mg/mg</td>
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</table>

**Stability in Water (1/2-life)**

Hydrolysis, half-life, 8.7 d, pH 7, Half-life Temperature 25 °C

**Photodegradation**

Atmospheric half-life: 5.6 Hour

**Method**: Estimated.

**clopyralid (ISO)**

- **Biodegradability**: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
- **10-day Window**: Fail
- **Biodegradation**: 5 - 10%
- **Exposure time**: 28 d
- **Method**: OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand**: 0.71 mg/mg

**Stability in Water (1/2-life)**

Hydrolysis, pH 4 - 9, Stable

**Photodegradation**

**Test Type**: Half-life (direct photolysis)

**Hydrocarbons, C9, aromatics**

- **Biodegradability**: For the major component(s): Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. For some component(s): Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**N,N-Dimethyloctanamide**
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: > 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

**Hydrocarbons, C10-C13, aromatics, <1% naphthalene**

Biodegradability: For similar material(s): Biodegradation may occur under aerobic conditions (in the presence of oxygen). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts**

Biodegradability: No relevant data found.

### 12.3 Bioaccumulative potential

**Triclopyr-2-butoxyethyl ester**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.62
Bioconcentration factor (BCF): 110 Fish.

**Clopyralid (ISO)**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -2.63
Bioconcentration factor (BCF): < 1 Fish. Measured

**Hydrocarbons, C9, aromatics**

Bioaccumulation: For the major component(s): Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). For the minor component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**N,N-Dimethyloctanamide**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.59 at 23 °C

**Hydrocarbons, C10-C13, aromatics, <1% naphthalene**

Bioaccumulation: No data available for this product. For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts**

Bioaccumulation: No relevant data found.

### 12.4 Mobility in soil

**Triclopyr-2-butoxyethyl ester**

Calculation of meaningful sorption data was not possible due to very rapid degradation in the soil.
For the degradation product:
Triclopyr.
Potential for mobility in soil is very high (Koc between 0 and 50).
clopyralid (ISO)
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 4.9

Hydrocarbons, C9, aromatics
No relevant data found.

N,N-Dimethyloctanamide
No relevant data found.

Hydrocarbons, C10-C13, aromatics, <1% naphthalene
No relevant data found.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts
No relevant data found.

12.5 Results of PBT and vPvB assessment

Triclopyr-2-butoxyethyl ester
This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

clopyralid (ISO)
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is considered to be very persistent and very bioaccumulating (vPvB).

Hydrocarbons, C9, aromatics
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

N,N-Dimethyloctanamide
This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Hydrocarbons, C10-C13, aromatics, <1% naphthalene
This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts
This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

12.6 Other adverse effects

Triclopyr-2-butoxyethyl ester
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

clopyralid (ISO)
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Hydrocarbons, C9, aromatics
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.
N,N-Dimethyloctanamide
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Hydrocarbons, C10-C13, aromatics, <1% naphthalene
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts
This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
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.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1 UN number
UN 1993

14.2 Proper shipping name
FLAMMABLE LIQUID, N.O.S.(Petroleum distillate, Triclopyr)

14.3 Class
3

14.4 Packing group
III

14.5 Environmental hazards
Petroleum distillate, Triclopyr

14.6 Special precautions for user
Special Provision 640E
Hazard identification No: 30

Classification for SEA transport (IMO-IMDG):

14.1 UN number
UN 1993

14.2 Proper shipping name
FLAMMABLE LIQUID, N.O.S.(Petroleum distillate, Triclopyr)

14.3 Class
3

14.4 Packing group
III

14.5 Environmental hazards
Petroleum distillate, Triclopyr
14.6 Special precautions for user

EmS: F-E, S-E

14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

14.1 UN number

UN 1993

14.2 Proper shipping name

Flammable liquid, n.o.s.(Petroleum distillate, Triclopyr)

14.3 Class

3

14.4 Packing group

III

14.5 Environmental hazards

Not applicable

14.6 Special precautions for user

No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH Regulation (EC) No 1907/2006

This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006 (REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer’s/user’s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Other regulations
Registration Number: MAPP 15752

15.2 Chemical Safety Assessment

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.
SECTION 16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

Full text of R-phrases referred to under sections 2 and 3
R10 Flammable.
R21 Harmful in contact with skin.
R22 Harmful if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R37 Irritating to respiratory system.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours may cause drowsiness and dizziness.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008
Flam. Liq. - 3 - H226 - On basis of test data.
Skin Irrit. - 2 - H315 - On basis of test data.
Eye Irrit. - 2 - H319 - On basis of test data.
Skin Sens. - 1B - H317 - On basis of test data.
STOT SE - 3 - H335 - Calculation method
STOT SE - 3 - H336 - Calculation method
Asp. Tox. - 1 - H304 - Calculation method
Aquatic Chronic - 2 - H411 - Calculation method

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DAS Code: GF-1652
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

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Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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