1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: BROADSIDE Herbicide

Product Code: 0145

Product Type: Group C I Herbicide

Company Name: NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)

Address: 103-105 Pipe Road Laverton North Victoria 3026 Australia

Emergency Tel.: 1800 033 498 (24hr Australia)

Telephone/Fax Number: Tel: +61 3 9282-1000 Fax: +61 3 9282-1001

Recommended Use: For the control of certain broadleaf weeds in wheat, barley, cereal rye, oats, triticale and turf as per the Directions for Use table on the label.

Other Information: This MSDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe.

2. HAZARDS IDENTIFICATION

Hazard Classification: Classified as hazardous

Risk Phrase(s): R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R63 Possible risk of harm to the unborn child.

Safety Phrase(s): S13 Keep away from food, drink and animal feeding stuffs.

S2 Keep out of reach of children.

S23(2) Do not breathe vapour.

S24 Avoid contact with skin.

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

Other Information: Poisons Schedule S6

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization: Liquid

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCPA (present as the iso-octyl ester)</td>
<td>94-74-6</td>
<td>280 g/L</td>
</tr>
<tr>
<td>Bromoxynil (present as the octanoate ester)</td>
<td>1689-99-2</td>
<td>140 g/L</td>
</tr>
<tr>
<td>Dicamba (present as the acid)</td>
<td>1918-00-9</td>
<td>40 g/L</td>
</tr>
<tr>
<td>Hydrocarbon Liquid Proprietary surfactant mixture (non-hazardous)</td>
<td>64742-94-5</td>
<td>289 g/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5-10 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: Remove to fresh air, apply artificial respiration if necessary.

Obtain medical assistance.
Material Safety Data Sheet

Product Name: BROADSIDE Herbicide

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water fog, foam, carbon dioxide or dry chemical.

Hazards fromCombustion Products: Although material is not flammable, the concentrate is combustible. Keep upwind.

If involved in a fire, it will emit toxic fumes of hydrogen bromide, hydrogen chloride, hydrogen cyanide or other compounds of bromine, chlorine and nitrogen.

Special Protective Equipment for fire fighters: Breathable air apparatus may have to be worn in confined spaces.

Other Information: STOP FIRE WATER FROM ENTERING DRAINS OR WATER BODIES.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal: Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect in sealed open top containers for disposal.

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

Clean-up Methods - Large Spillages: If large liquid spills occur, attempt to recover as much spilt material from sumps and bunched areas before absorbing remaining material into vermiculite or other absorbent.

Environmental Precautions: Prevent from entering drains, waterways or sewers. Use earthen bunds or absorbent bunding to prevent spreading of spillage.

7. HANDLING AND STORAGE

Precautions for Safe Handling and Storage: For personal protective equipment (PPE) and hygiene advice, refer Section 8.

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

Other Information: Always read the label and any attached leaflet before use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards: No exposure standards have been set for this product or the active ingredients.

The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m3; 17ppm TWA, as total hydrocarbon.
Material Safety Data Sheet

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Classified as hazardous

Engineering Controls
Handle in well ventilated areas, generally natural ventilation is adequate.

Personal Protective Equipment
When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles.

Hygiene Measures
After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.
After each day's use, wash contaminated clothing and safety equipment.

Requirements Concerning Special Training
NSW regulations require that people who use pesticides in their job or business must have training in the application of the materials.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form
Liquid

Appearance
Clear, dark-brown liquid

Odour
Typical solvent odour

Melting Point
<0°C

Boiling Point
190-270°C (for solvent present)

Solubility in Water
Forms an emulsion in water.

Specific Gravity
1.089

pH Value
Neutral

Vapour Pressure
0.19 mPa @ 25°C Bomoxynil octanoate;
0.48 mPa @ 20°C MCPA iso-octyl ester;
1.67 @ 25°C mPa Dicamba.

Vapour Density (Air=1)
~5 (for solvent present)

Volatile Component
~30% v/v

Flash Point
75°C (PMCC)

Flammability
Combustible liquid Cl.

Auto-Ignition Temperature
Not known

Flammable Limits - Lower
0.6% for solvent

Flammable Limits - Upper
7% for solvent

10. STABILITY AND REACTIVITY

Hazardous Reactions
Keep away from strong oxidising agents, may react violently.

Hazardous Polymerization
Hazardous polymerisation is not possible.

11. TOXICOLOGICAL INFORMATION

Inhalation
The components of the product are of low volatility and no adverse effects are expected from handling the concentrate.
In confined spaces, some discomfort may occur due to the presence of some solvent vapour.
The product may constitute a moderate hazard during spraying operations.
The concentrate is harmful if swallowed.

Ingestion
Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury.
However, swallowing of large amounts may cause injury.
If aspirated into the lung, e.g. from vomiting, the presence of solvent may result in chemical pneumonitis.

Skin
Acute dermal toxicity has not been determined for this product; based on data available for its components, dermal toxicity is expected to be harmful.
Prolonged contact with the concentrate can cause defatting of the skin and may
result in dermatitis. The concentrated product may cause slight irritation on contact. The concentrate may cause irritation of the eyes. Chronic Overexposure: Weight loss and damage to liver and kidneys may be expected if exposure is excessive. 

Reproductive Toxicity 
Bromoxynil octanoate has been assigned R63 on the basis of studies, in rats, rabbits, and mice which show reduced ossification and increased incidence of supernumerary ribs at doses (range 5-15 mg/kg/day) which are not toxic maternally. Supernumerary ribs are seen in control animals and are often seen in reproductive toxicity studies. The ribs disappear during subsequent development with rats, but not with mice. The significance of supernumerary ribs as an indicator of developmental toxicity and extrapolation to other species remain problematical. (1) 

Other Information 
The Australian Acceptable Daily Intake (ADI) for bromoxynil for a human is 0.003 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.3 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing Office of Chemical Safety, 'ADI List', December 2008).

ADI for MCPA is 0.01 mg/kg/day, NOEL 1.1 mg/kg/day. 
ADI for dicamba is 0.03 mg/kg/day, NOEL 3 mg/kg/day.

ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment
The product is a marine pollutant for sea transport.

Other Precautions
Do not spray in high winds.
Do not contaminate dams, waterways or sewers with this product or the containers which have held this product.
Spray drift can cause damage, read the label for more information.

Acute Toxicity - Fish
LC50 (96hr) for rainbow trout is 135 mg/l for dicamba 
LC50 (96hr) for rainbow trout is 1.15 mg/l for MCPA iso-octyl ester 
LC50 (96hr) for rainbow trout is 0.041 mg/l for bromoxynil octanoate

Acute Toxicity - Other Organisms
Not toxic to bees.
Not toxic to birds.

DISPOSAL CONSIDERATIONS

Product Disposal
On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).

Container Disposal
Do not use this container for any other purpose. Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations.
drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical
Product Name: BROADSIDE Herbicide

Classified as hazardous

containers. If the label on your container carries the drumMuster symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.

If recycling, replace cap and return clean containers to recycler or designated collection point.

If not recycling, puncture or shred and bury containers in local authority landfill.

If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.

Empty containers and product should not be burnt.

Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage.

14. TRANSPORT INFORMATION

Transport Information
It is good practice to separate this product from food, food related materials, animal feedstuffs, seed or fertilisers during transport.

Storage and Transport
Considered non dangerous for road and rail transport (in packaging, including IBCs not greater than 3000 Lt each) by the Australian Code for the Transport of Dangerous Goods by Road and Rail. Ref: ADG7; SP No. AU01.

For bulk shipments as Class 9, use UN 3082, HazChem code •3Z.

UN Number (Sea Transport)
3082

IMO Class/Packing Group
Class 9; Packing Group III

IMO Marine Pollutant
Marine Pollutant

IMO Proper Shipping Name
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Bromoxynil)

15. REGULATORY INFORMATION

Poisons Schedule
S6

Packaging & Labelling
POISON
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Hazard Category
Harmful

AICS (Australia)
All of the components in this product are listed on the Australian Inventory of Chemical Substances.

16. OTHER INFORMATION

Date of preparation or last revision of MSDS
Revised 29/06/2009

Contact
Normal Hours: Mr Volker Maier Phone: +61 3 9282 1000
After Hours: Shift Supervisor Phone: 1800 033 498

Literature References

Revisions Highlighted
The MSDS was reviewed. Various changes were made to the information.

...End Of MSDS...