

# MATERIAL SAFETY DATA SHEET

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Date of Issue: October 2012  
MSDS No. FMC/BRO/1

## SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name: BROADWAY HERBICIDE**

**Other Names:** Carfentrazone-ethyl + Glyphosate.  
**Use:** Agricultural Herbicide for the control of a wide range of grasses and broadleaf weeds.  
**Company:** FMC Crop Protection Pty Ltd.  
**Address:** Unit 26, 8 Metroplex Avenue, Murarrie, Qld 4172  
**Telephone Number:** 07 3908 9222 **Fax Number:** 07 3908 9221  
**Emergency Telephone Number:** 1800 033 111 (All hours - Australia wide).

## SECTION 2 HAZARDS IDENTIFICATION

**Classified as hazardous according to criteria of the Safe Work Australia.  
Not classified as a Dangerous Good according to the ADG Code**

**Risk phrases:** R36 Irritating to eyes.  
**Safety Phrases:** S2 Keep out of reach of children.  
S24/25 Avoid contact with skin and eyes.  
S36/37 Wear suitable protective clothing and gloves.

## SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients:

<b>CHEMICAL</b>	<b>CAS NUMBER</b>	<b>PROPORTION (% w/w)</b>
Carfentrazone-ethyl	128639-02-1	0.66 %
Glyphosate	1071-83-6	36.3 %
Liquid Hydrocarbons	64742-94-5	1 - 10%
Other ingredients determined not to be hazardous	mixture	Balance

## SECTION 4 FIRST AID MEASURES

### FIRST AID

**Swallowed:** If poisoning occurs, contact a doctor or Poisons Information Centre. Phone 13 11 26. If swallowed, do not induce vomiting. Give a glass of water. If any discomfort persists seek medical advice.

**Eye:** If in eyes, hold eyes open, flood with water. If discomfort persists see a doctor.

**Skin:** If on skin wash with plenty of soap and water. Remove contaminated clothing. If irritation occurs and persists see a doctor.

**Inhaled:** Remove patient to fresh air. If breathing discomfort occurs, obtain medical attention.

**Advice to Doctors:** This product has low oral, dermal and inhalation toxicity. It is mildly irritating to the eyes, and moderately irritating and non-sensitizing to the skin. Inert ingredients contain aromatic solvents, at low levels, which may produce a chemical pneumonitis; therefore, vomiting is not recommended, and lavage requires intubation. Activated charcoal and cathartics will assist gastrointestinal tract evacuation. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

**SECTION 5 FIRE FIGHTING MEASURES**

**Specific Hazard:** Product is classified as a combustible liquid. Flash point > 100°C. This material may support combustion at elevated temperatures.

**Extinguishing media:** Foam, CO<sub>2</sub> or dry chemical. Soft stream water fog if no alternatives. Contain all runoff.

**Hazards from combustion products:** On burning will emit toxic fumes.

**Precautions for fire-fighters and special protective equipment:** Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**Emergency procedures:** Isolate and post spill area. Wear prescribed protective clothing and equipment. Large spills should be dyked or covered to prevent dispersal. Vacuum shovel or pump spilled material into an approved container and dispose of as listed below.

**Material and methods for containment and cleanup procedures:** To clean spill area, tools and equipment, wash with a solution of soap, water and acetic acid/vinegar. Follow this with a neutralisation step of washing the area with a bleach or caustic soda ash solution. Finally, wash with a strong soap and water solution. Absorb, as above, any excess liquid and add both solutions to the drums of waste already collected.

Dispose of waste as indicated in section 13 or according to Australian Standard 2507 - Storage & Handling of Pesticides. Wear protective clothing such as full body cover barrier suit, eg. a rubber rain suit. Keep out unprotected persons and animals.

Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

**SECTION 7 HANDLING AND STORAGE**

**Precautions for Safe Handling:** Ensure containers are kept closed until using product. Avoid skin and eye contact and breathing vapour. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length chemical resistant gloves and face shield or chemical protective goggles.

**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.

This product is classified as a C1 Combustible Liquid. Storage and handling must be in accordance with the requirements of AS 1940 "The storage and handling of flammable and combustible liquids". Refer to state regulations for storage and transport requirements.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****National Exposure Standards:**

No exposure standard for carfentrazone-ethyl, glyphosate or the other ingredients has been established by the Safe Work Australia.

**Biological Limit Values:**

No biological limit allocated.

**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.

**SECTION 8 | EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)****Personal Protective equipment (PPE):**

**Work Clothing:** Wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow-length chemical resistant gloves and face shield or chemical resistant goggles.

**Eye Protection:** When using product, wear chemical protective goggles or face shield.

**Respiratory Protection:** If inhalation risk exists, wear a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (Australian Standards).

**Gloves:** Wear chemical protective gloves when handling this product. Inspect regularly for leaks. Wash the outside of gloves with soap and water prior to removal.

**Personal Hygiene:** 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.

**SECTION 9 | PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Off white to yellow coloured liquid.
<b>Boiling point:</b>	Not available.
<b>Freezing point:</b>	Not available.
<b>Specific Gravity:</b>	1.2 g/mL.
<b>pH:</b>	4 - 6.
<b>Solubility in Water:</b>	Product emulsifies in water.
<b>Flammability:</b>	Combustible liquid.
<b>Corrosive hazard:</b>	Not compatible with galvanised steel or unlined steel containers as a highly flammable gas mixture may be formed.
<b>Flashpoint (°C):</b>	> 100°C.
<b>Flammability Limits (%):</b>	Not established.
<b>Poisons Schedule:</b>	Product is a schedule 6 poison.

**SECTION 10 | STABILITY AND REACTIVITY**

**Chemical Stability:** Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

**Conditions to avoid:** Keep away from sources of heat and naked flames.

**Incompatible materials:** DO NOT use with galvanised steel or unlined steel.

**Hazardous decomposition products:** When the product is heated to high temperatures toxic and noxious fumes may be released including carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride, and hydrogen fluoride.

**Hazardous reactions:** DO NOT mix, store or apply this product or spray solutions of this product in galvanised steel or unlined steel as a highly flammable gas mixture may be formed.

**SECTION 11 | TOXICOLOGICAL INFORMATION****Potential Health Effects:**

This product has low oral, dermal and inhalation toxicity. It is mildly irritating to the eyes, and moderately irritating and non-sensitizing to the skin. Signs of toxicity with carfentrazone-ethyl, in laboratory animals, included tremors, abdominal gripping, mucoid anal discharge, bloody oral discharge, hypothermia, squinting eyes, lacrimation, and pink to orange-brown discoloration of urine. Inhalation of aromatic hydrocarbon vapours may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary oedema.

**Acute**

**Swallowed:** The product has low toxicity; the oral LD<sub>50</sub> in the rat > 2000 mg/kg.

**Eye:** Mildly irritating to the eyes.

**Skin:** This product has a low dermal toxicity. The dermal LD<sub>50</sub> in the rabbit is > 2000 mg/kg. It is moderately irritating and non-sensitising to the skin.

**Inhaled:** Inhalation of vapour may produce irritation of the mucous membranes of the respiratory tract. Acute inhalation LC<sub>50</sub> > 2.5 mg/L/4 hrs.

**SECTION 11 TOXICOLOGICAL INFORMATION (Continued)**

**Chronic:** No data is available for the formulation. In studies with laboratory animals, carfentrazone-ethyl did not cause reproductive toxicity, teratogenicity, or carcinogenicity. An overall absence of genotoxicity has been demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations. Repeated or long-term exposure to glyphosate in laboratory animals have shown to result in reduced body weight gain and effects on the liver tissues. Overall, glyphosate is not considered to be teratogenic, genotoxic and/or a carcinogen. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.

**SECTION 12 ECOLOGICAL INFORMATION**

**Environmental Information:** No data is available on Broadway Herbicide. Toxicity data are based on the active constituents, carfentrazone-ethyl and glyphosate.

**Environmental Toxicology:** Carfentrazone-ethyl is toxic to algae ( $EC_{50} = 15$  ppb), moderately toxic to fish ( $LC_{50}$  1.6 to 2 mg/L) and slightly toxic to aquatic crustacean ( $LC_{50} = > 9.8$  mg/L). Carfentrazone-ethyl was shown to cause no effects to earthworms at concentrations up to 820 mg/kg in soil. Carfentrazone-ethyl is slightly toxic to birds ( $LD_{50} > 2,250$  mg/kg) and low toxicity to bees (no deaths at 200 µg/bee). Glyphosate is moderately persistent in soil, with an estimated average half-life of 47 days. Reported field half-lives range from 1 to 174 days. Half-life for glyphosate in ponds is 12 days to 10 weeks. It is strongly absorbed to soil. Thus, even though it is highly soluble in water, field and laboratory studies show that glyphosate does not leach and has a low potential for runoff.

**Environmental Properties:** Carfentrazone-ethyl is rapidly degraded in soils under aerobic and anaerobic conditions (half life = 1 to 2 days). Carfentrazone-ethyl rapidly hydrolyses at pH 9 but stable at pH 5. Field studies show that Carfentrazone-ethyl has a low potential for movement in the soil. The Log P of 3.36 and a measured bioconcentration factor of 206 in fish, indicate a low potential for accumulation. The low vapour pressure ( $1.19 \times 10^{-7}$  Torr) indicates that volatility is not a concern. Glyphosate is slightly toxic to wild birds.  $LC_{50}$  (bobwhite quail)  $> 4500$  ppm, practically non-toxic to fish and may be slightly toxic to aquatic invertebrates.  $LC_{50}$  96-hour (bluegill sunfish) = 120 mg/L,  $LC_{50}$  96-hour (harlequin) = 1680 mg/L,  $LC_{50}$  96-hour (rainbow trout) = 86 mg/L,  $LC_{50}$  96-hour (Atlantic oyster)  $> 10$  mg/L,  $LC_{50}$  96-hour (fiddler crab) = 934 mg/L,  $LC_{50}$  96-hour (shrimp) = 281 mg/L,  $LC_{50}$  48-hour (daphnia) = 780 mg/L,  $LD_{50}$  (oral & dermal) =  $>0.1$  mg/bee (Non-toxic, honeybee),  $LC_{50} >5000$  ppm (Earthworms).

Do not contaminate sewers, drains, dams, creeks or any other waterways with product or the used container.

**SECTION 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 a suitable solution (ie organic solvent, detergent, bleach or caustic) and add the solution to the drums of wastes already collected. Label for contents. Dispose of drummed wastes, including decontamination solution, in accordance with the requirements of Local or State Waste Management Authorities.

**Disposal of empty containers:** Break, crush, puncture and bury empty containers in a local authority landfill. If not available bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should not be burnt.

**SECTION 14 TRANSPORT INFORMATION**

**Transport:** This product is not classified as a Dangerous Good. Product is a C1 combustible liquid.

**SECTION 15 REGULATORY INFORMATION**

Classified as a hazardous substance according to criteria of the Safe Work Australia. (Xi - Irritant). Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP No. 1), this product is a schedule 5 poison.

Product is not classified as a Dangerous Good according to the ADG Code (7<sup>th</sup> Ed).

**SECTION 16 OTHER INFORMATION**

**CONTACT POINT:** The Manager, FMC Crop Protection Pty Ltd., Murarrie, Brisbane Qld. 4172.  
Telephone: 07 - 3908 9222 Facsimile: 07 - 3908 9221

Issue Date: 5 October 2012 (update of company name).

Key to abbreviations and acronyms used in this MSDS:

ADG Code Australian Dangerous Goods Code (for the transport of Dangerous Goods by Road and Rail).

ASCC Australian Safety & Compensation Council (formally known as the National Occupational Health & Safety Commission (NOHSC)).

Carcinogen An agent which is responsible for the formation of a cancer.

Genotoxic Capable of causing damage to genetic material, such as DNA.

Lacrimation The production, secretion, and shedding of tears.

Lavage A general term referring to cleaning or rinsing.

NOHSC National Occupational Health and Safety Commission.

Pneumonitis A general term that refers to inflammation of lung tissue.

PPE Personal protective equipment.

Teratogen An agent capable of causing abnormalities in a developing foetus.

TWA The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.

Safe Work Australia: Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC)).

**References**

1. "Search Hazardous Substances". Australian Safety and Compensation Council website. (2011).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.
3. Standard for the Uniform Scheduling of Medicines and Poisons. No. 1. National Drugs and Poisons Scheduling Committee. September 2010.

This MSDS summarises 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 how 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 this company.

*End of MSDS*