

MATERIAL SAFETY DATA SHEET

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Date of Issue: December 2012
MSDS No. FMC/BROMCPA/1

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: FMC Bromoxynil + MCPA Herbicide

Other Names: Bromoxynil + MCPA, a Group C and I Herbicide.
Use: Agricultural herbicide for the control of weeds.
Company: FMC Crop Protection Pty Ltd.
Address: 5 Palmer place, 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.
Combustible Liquid (C1).**

Risk phrases: R21/22 Harmful in contact with skin and if swallowed.
R23 Toxic by inhalation.
R43 May cause sensitization by skin contact.
R63 Possible risk of harm to the unborn child.
R65 Harmful: may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness and cracking.
R67 Vapours may cause drowsiness and dizziness

Safety Phrases: S1/2 Keep locked up and out of reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell seek medical advice immediately.
S51 Use only in well ventilated areas.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	CAS NUMBER	PROPORTION
Bromoxynil (present as n-octanoyl ester)	1689-99-2	200 g/L
MCPA (present as ethyl hexyl ester)	94-74-6	200 g/L
Proprietary surfactant mixture	-	5 – 10%
Liquid Hydrocarbon	64742-94-5	343 g/L

SECTION 4 FIRST AID MEASURES

Swallowed: If swallowed do NOT induce vomiting; seek medical advice immediately and show this container or label, or contact the Poisons Information Centre phone Australia 13 11 26. Make every effort to prevent vomit from entering the lungs by careful placement of the patient.

The above first aid instructions are mandated by the Commonwealth Department of Health and Ageing via the National; Drugs and Poisons Schedule. These instructions are suitable for ingestion of spray solution and small amounts of concentrate; however if SUBSTANTIAL AMOUNTS of the concentrate have been

SECTION 4 FIRST AID MEASURES (Continued)

swallowed (more than about 15 mL) AND if medical assistance is more than 30 minutes away, the induction of vomiting should be CONSIDERED, preferably based on MEDICAL ADVICE if a physician can be contacted by phone. All care must be taken to prevent vomit from being inhaled. Do not give anything by mouth to a semi-conscious or unconscious person.

Eye: If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes. Seek medical advice if irritation develops or persists.

Skin: Remove contaminated clothing and launder before re-use. Wash affected areas with soap and water.

Inhaled: Remove affected person to fresh air until recovered. If symptoms develop or persist, seek medical advice.

Advice to Doctor: Treat symptomatically. If vomiting occurs, solvent present may cause pulmonary pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

Specific Hazard: Flash point 75°C. Combustible liquid (C1).

Extinguishing media: Extinguish fire using foam blanket, carbon dioxide or dry agent. If not available, use waterfog or fine water spray but ensure all runoff is contained. Contain all runoff.

Hazards from combustion products: If involved in a fire, it will emit harmful fumes of hydrogen bromide, hydrogen chloride, hydrogen cyanide and possibly other compounds of bromine, chlorine and nitrogen. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke. Keep upwind.

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 cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves and face-shield or goggles. 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. Keep out unprotected persons and animals.

Material and methods for containment and cleanup procedures: 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. Absorb, as above, any excess liquid and add both solutions to the drums of waste already collected. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

This product is a herbicide and spills can damage crops, pastures and desirable vegetation. 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. Product is poisonous if inhaled or swallowed. Attacks the eyes and will irritate the skin. Avoid contact with eyes and skin. DO NOT inhale spray mist. When preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves and face-shield or goggles. If product in eyes, wash it out immediately, with water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

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.

SECTION 7 | HANDLING AND STORAGE (Continued)

Not classified as a Dangerous Good. 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. This product is a Schedule 6 Poison (S6) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

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

Exposure guidelines have not been established for this product by safe Work Australia however the manufacturer recommends the following guideline.

Atmospheric Contaminant	Exposure Standard (TWA)
Total hydrocarbon	100 mg/m ³ (17 ppm)

TWA = Time-Weight Average

Biological Limit Values:

No biological limit allocated.

Engineering controls:

Use in well ventilated areas only. Ventilate all transport vehicles prior to unloading. Keep containers closed when not in use.

Personal Protective equipment (PPE):

General: When preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow-length PVC gloves and face-shield or goggles. If product in eyes, wash it out immediately, with water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

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 (Australian Standards).

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

Appearance:	Dark brown liquid.
Odour:	Typical solvent (hydrocarbon) odour.
Boiling Point:	No data for product. 190 - 270°C for solvent.
Solubility in Water:	Emulsifies in water.
Specific Gravity:	Approximately 1.1
pH Value:	3.5 – 4.0 (1% solution).
Volatile Component:	30 – 40%.
Flash Point:	75°C.
Flammability:	Combustible liquid C1.
Poison Schedule:	This product is a schedule 6 (S6) 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: Do not store for prolonged periods in direct sunlight.

Incompatible materials: Strong acids, strong bases and strong oxidising agents.

Hazardous decomposition products: If involved in a fire, it will emit harmful fumes of hydrogen bromide, hydrogen chloride, hydrogen cyanide and possibly other compounds of bromine, chlorine and nitrogen.

Hazardous reactions: Violent reactions between this product and oxidising agents are possible. Avoid chlorates, nitrates, nitric acid, organic peroxides and potassium chlorate.

SECTION 11 TOXICOLOGICAL INFORMATION

No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on similar products and/or individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

ACUTE EFFECTS

Swallowed: Possible symptoms of exposure include: headache, nausea, dizziness and weakness. If aspirated into the lung, e.g. from vomiting, the presence of solvent may result in chemical pneumonitis or other lung damage. LD₅₀ (rat) = 238 mg/kg for Bromoxynil octanoate. LD₅₀ (rat) = 1300 mg/kg for MCPA 2EHE.

Skin: Mild to Moderate skin irritant. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis. Bromoxynil octanoate is a skin sensitiser. LD₅₀ (rat) > 2000 mg/kg for Bromoxynil octanoate. LD₅₀ (rat) > 2000 mg/kg for MCPA 2EHE.

Eye: The product is an eye irritant.

Inhaled: High vapour concentrations of the solvent while handling the concentrate are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, and may have other central nervous system effects. LC₅₀ (rat) = 0.72 mg/L/4hrs for Bromoxynil octanoate. LC₅₀ (rat) > 3.1 mg/L/4 hrs for MCPA 2EHE.

Chronic Effects: 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 species remain as an indicator of developmental toxicity and extrapolations to other species remain problematical.

SECTION 12 ECOLOGICAL INFORMATION**Environmental Toxicology:**

No data is available for the product, the following information is for the active ingredients. Product is toxic to fish and some birds. Bromoxynil and MCPA are not toxic to bees.

Test	Bromoxynil octanoate	MCPA 2EHE
LC ₅₀ for Rainbow trout:	(96hr) 0.041 mg/L	(48hr) 1.15 mg/L for LC ₅₀
LC ₅₀ for Daphnia magna:	(48 hr) 0.046 mg/L	-
LC ₅₀ for pheasants:	50 mg/kg	-
LC ₅₀ for Bobwhite quail:	100 mg/kg	377 mg/kg

Environmental Properties:

Bromoxynil has low persistence in soil. In sandy soil DT₅₀ is about 10 days and in clay about 2 weeks. MCPA is also rapidly degraded with DT₅₀ ranging from 14 to 30 days.

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 detergent and water and add the solution to the drums of wastes already collected and label contents. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

SECTION 13 DISPOSAL CONSIDERATIONS (Continued)

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.

SECTION 14 TRANSPORT INFORMATION

Transport information: This product is exempt from classification as a Dangerous Good in packs less than 3,000 kg or litres under the Australian Code for the Transport of Dangerous Goods by Road and Rail. For bulk shipments this product is a class 9, UN 3082. (See special provision AU01).

Marine and Air Transport: This product is classified as a Marine Pollutant according to International Maritime Dangerous Goods (IMDG) Code and the International Air transport Association (IATA). If transporting by sea or air the following Dangerous Goods Classification applies:-

UN 3082, Class 9 (Miscellaneous Dangerous Goods), Packing Group III, Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Bromoxynil octanate). Hazchem code •3Z. Hazard Identification Number (HIN) 90.

SECTION 15 REGULATORY INFORMATION

Classified as a hazardous substance according to criteria of the Safe Work Australia. (Xn - harmful, T – toxic, Xi - irritant).

Under the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP), this product is a schedule 6 poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 67804.

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

Requirements concerning special training:

Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

SECTION 16 OTHER INFORMATION

Issue Date: 19 December 2012. Valid for 5 years. (First issue).

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.
Ossification:	The process of creating bone, that is of transforming cartilage (or fibrous tissue) into bone.
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.
Supernumerary	An additional member.
TWA:	The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.

SECTION 16 | OTHER INFORMATION (Continued)

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". Safe Work Australia website. (2012).
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. 3. Medicines and Poisons Scheduling Secretariat. June 2012.

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