



Material Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE CHEMICAL PRODUCT

Product Name: BRONX 200 EC SELECTIVE HERBICIDE

Product Type: Group C Herbicide/ Hydroxybenzotrile derivative, present as the n-octanoyl ester.

Product Use: For the control of certain broadleaf weed in cereals, linseed, lucerne, pastures and turf as specified in the Directions for Use table.

SECTION 2: HAZARD IDENTIFICATION

Statement of Hazardous Nature

This product is classified as: Xn, Harmful. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code. However, this is a C1 Combustible Liquid and for storage meets the definition of Dangerous Goods.

Risk Phrases: R63, R65, R20/21 R50/53. Possible risk of harm to the unborn child. Harmful: May cause lung damage if swallowed. Harmful by inhalation and in contact with skin. Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S2, S46, S60, S61, S24/25, S36/37. Keep out of reach of children. If swallowed, contact a doctor or Poisons Information Centre immediately and show this MSDS or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves.

SUSDP Classification: S6. **ADG Classification:** None allocated. Not a Dangerous Good under the ADG code.

UN Number: None allocated

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS	Proportion
Bromoxynil n-octanoyl ester	1689-99-2	200g/L
Aromatic hydrocarbon	64742-94-5	610g/L
Other non-hazardous ingredients	-	to 100%

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SECTION 4: FIRST AID MEASURES

Inhalation: If inhaled remove victim to fresh air. Remove contaminated clothing and loosen remaining clothing. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult. Seek medical attention if symptoms persist.

Skin Contact: Wash affected area thoroughly with soap (non-abrasive soap if necessary) and water. Seek medical attention if symptoms persist.

Eye Contact: Flush contaminated eye(s) with water for 15 minutes or until the product is removed. Seek medical attention if symptoms persist.

Ingestion - swallowing: If swallowed, rinse mouth with water. Do not induce vomiting. Do not give anything by mouth to unconscious person. Make every effort to prevent vomit entering the lungs. Seek immediate medical attention.

Advice to Doctor: Treatment is symptomatic.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: This product is classified as a C1 combustible product. There is little risk of an explosion from this product if commercial quantities are involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Suitable extinguishing media are carbon dioxide, dry chemical, foam, water fog.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: 68°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: C1

SECTION 6: ACCIDENTAL RELEASE MEASURES

In the event of a major spill, prevent spillage from entering drains or water courses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals. Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by

consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

SECTION 7: HANDLING AND STORAGE

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed.

The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Note that this product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. If you store large quantities (tonnes) of such products, we suggest that you consult your state's Dangerous Goods authority in order to clarify your obligations regarding their storage. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label..

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits have not been established by ASCC for these ingredients ie. No TWA or STEL limits set. No biological limits applicable.

Ensure adequate ventilation and reduced dust in a shaded dry storage.

The ADI for Bromoxynil is set at 0.003mg/kg/day. The corresponding NOEL is set at 0.3mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Sept 2010.

Personal Protective Equipment:

Australian Standards regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary. Safety deluge showers should, if practical, be provided near to where this product is being used.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Description & colour: Amber coloured liquid.

Odour: Hydrocarbon odour.

Boiling Point: Solvent boils at 178-209°C at 100kPa.

Freezing/ Melting Point: No specific data. Liquid at normal temperatures.

Volatiles: No specific data. Expected to be low at 100°C, but about 60°C at higher temperatures.

Vapour Pressure: No data.

Vapour Density: No data.

Specific Gravity: 1.02

Water Solubility: Emulsifiable.

pH: No data.

Volatility: No data.

Autoignition temp: No data.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

Incompatibilities: strong acids, strong bases, strong oxidising agents.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Water, bromine compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

SECTION 11: TOXICOLOGICAL INFORMATION

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs.

Bromoxynil is a ASCC Class 3 Reproductive risk, a possible cause of decreased fertility in humans.

Acute toxicity: Technical Bromoxynil has an oral LD50 of 190 mg/kg in rats, an LD50 of 260 mg/kg in rabbits, and an LD50 of 63 mg/kg in guinea pigs, indicating moderate acute toxicity. The dermal LD50 of Bromoxynil is greater than 2000 mg/kg in rabbits. The compound is a slight eye irritant but it is not a skin irritant in rabbits. However, when in contact with abraded skin, Bromoxynil may produce a mild irritation.

Chronic toxicity: In one documented case of chronic exposure (about 1 year) of humans to Bromoxynil, workers showed symptoms of weight loss, fever, vomiting, headache, and urinary problems. Studies have shown that Bromoxynil has no effect on rats given dietary doses of 15 and 50 mg/kg/day for 90 days. Doses up to 5 mg/kg/day for 2 years had no impact on blood chemistry or urine.

Reproductive effects: No changes in reproduction were noted in female rats fed 15 mg/kg/day of Bromoxynil over three generations. This suggests that Bromoxynil does not cause reproductive effects.

Teratogenic effects: Bromoxynil is a suspected teratogen. The compound produced birth defects in rats at oral doses above 35 mg/kg. Toxic effects included abnormal rib formation and reduced foetal weight. Newborn rabbits had birth defects when Bromoxynil was administered to

pregnant mothers at doses above 30 mg/kg. In the rabbit, birth defects included changes in bone formation in the skull and hydrocephaly.

Mutagenic effects: No data are currently available.

Carcinogenic effects: Rats fed Bromoxynil at low levels of 5 mg/kg and below did not develop any cancer related effects.

Organ toxicity: No data were available regarding the target organs affected by Bromoxynil.

Fate in humans and animals: No Bromoxynil was present in the milk or faeces of cows 9 days after exposure to low doses of the herbicide. Less than 20% of the compound was excreted in urine as the parent compound.

SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Effects on birds: Bromoxynil is highly toxic to pheasants (LD50 of 50 mg/kg) and is moderately toxic to hens (LD50 of 240 mg/kg), quail (LD50 of 100 mg/kg), and mallard ducks (LD50 of 200 mg/kg).

Effects on aquatic organisms: Bromoxynil is very highly toxic to moderately toxic to freshwater fish; the potassium salt of Bromoxynil has an LC50 of 5.0 mg/L in harlequin fish, 0.46 mg/L in goldfish, and 0.063 mg/L in catfish. Bromoxynil has an LC50 of 0.05 mg/L in rainbow trout.

Effects on other organisms: Bromoxynil is not toxic to bees.

Environmental Fate:

Breakdown of Chemical in Soil and Groundwater: Bromoxynil has a low persistence in soil. In sandy soil, the half-life is about 10 days. Degradation in clay was slower, with half of the Bromoxynil degraded to its metabolites in about a 2-week period at 25°C. The persistence of the compound is also slightly longer in peat field soils than in the sandy soils. The evidence suggests that, while Bromoxynil is broken down by some soil bacteria, it may inhibit the action of other bacteria that promote the formation of nitrite by a process called nitrification.

Breakdown in water: No data are currently available.

Breakdown in vegetation: The herbicide works by disrupting the plants ability to produce energy for cell-related activities. It is not readily translocated throughout the plant once it has been absorbed.

SECTION 13: DISPOSAL CONSIDERATIONS

Instructions for the disposal of this product and its containers are listed on the product label.

For collection of unwanted rural chemicals, contact ChemClear @1800 008 182 www.chemclear.com.au and for help with the disposal of empty drums, contact DrumMuster@ www.drummuster.com.au for local and State contacts.

SECTION 14: TRANSPORT INFORMATION

UN Number: None allocated

Proper Shipping Name: None allocated

SUSDP Classification: S6.

ADG Class: None allocated. Not a dangerous good.

Hazchem Code: None allocated

Packing Group: None allocated

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SECTION 15: REGULATORY INFORMATION

SUSDP: S6.

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

APVMA Registration Number: 66418

SECTION 16: OTHER INFORMATION

This MSDS contains only safety-related information sourced from the public domain and analytical results on this product:

Acronyms:

ADG Code Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition

AICS Australian Inventory of Chemical Substances

CAS number Chemical Abstracts Service Registry Number

Hazchem Number Emergency action code of numbers and letters that provide information firefighters

IARC International Agency for Research on Cancer

ASCC Office of the Australian Safety and Compensation Council

NTP National Toxicology Program (USA)

R-Phrase Risk Phrase

SUSDP Standard for the Uniform Scheduling of Drugs & Poisons

UN Number United Nations Number

Police and Fire Brigade: Dial 000 **Poisons Information Centre (13 1126)**

Emergency contact: 04 0214 9346 (24 hours)

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