SAFETY DATA SHEET

BUGMASTER® FLOWABLE INSECTICIDE

Date of Issue: 23 December 2022

1. IDENTIFICATION

Product Identifier:	**Bugmaster® Flowable Insecticide**
Other Means of Identification:	Carbaryl (an anti-cholinesterase compound) Carbamate (chemical family)
Recommended Use of the Chemical and Restrictions on Use:	**Insecticide**
Details of Manufacturer or Importer:	AgNova Technologies Pty Ltd Unit 4, 482 Kingsford Smith Drive Hamilton Qld 4007 Australia (03) 9899 8100 agnova.com.au
Emergency Phone Number:	1800 033 111 (24 hrs) IXOM ERS 13 11 26 Poisons Information Centre

2. HAZARD(S) IDENTIFICATION

GHS CLASSIFICATIONS

WARNING

Suspected of causing cancer (H351)
Suspected of damaging fertility or the unborn child (H361)
Harmful if swallowed or inhaled (H302+H332)
May be harmful in contact with skin (H313)
Very toxic to aquatic life (H400)



HAZARD CLASSIFICATION

Health Hazards	Category	Physical Hazards	Category
Carcinogenicity	2	None	--
Reproductive Toxicity	2		
Acute toxicity, oral	4	**Environmental Hazards**	**Category**
Acute toxicity, inhalation	4	Hazardous to the Aquatic Environment – Acute	1

HAZARDS NOT REQUIRING CLASSIFICATION

None

PRECAUTIONARY STATEMENTS

Obtain, read and follow all safety instructions before use. Avoid breathing mist/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves and protective clothing. (P203+P261+P264+P270+P271+P280)

IF exposed or concerned, get medical advice. (P318)

IF SWALLOWED: Get medical help. Rinse mouth. (P301+P317+P330)

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help. (P304+P340+P317)

IF ON SKIN: Get medical help. (P302+P317)

Store locked up. (P405)

Avoid release to the environment not in accordance with the product label. Collect spillage. (P273+P391)

Dispose of contents / container using instructions in the product label and in accordance with local / Federal regulations. (P501)

OTHER CLASSIFICATIONS

ADG Classification: Not classified as Dangerous Goods for land transport under the Australian Code for Transport of Dangerous Goods by Road and Rail 7th Edition special provision AU01 – refer Section 14

SUSMP Classification: Schedule 6 (Standard for Uniform Scheduling of Medicines and Poisons)

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (% w/w):
Carbaryl (1-Naphthalenol, 1-(N-methylcarbamate))	63-25-2	43
Propylene Glycol (1,2-propanediol)	57-55-6	5

4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (Phone 13 11 26), and follow the advice given. Show this Safety Data Sheet to a doctor.

Description of Necessary First Aid Measures:

Ingestion:	Call Poisons Information Centre (13 11 26) or doctor immediately for treatment advice. If swallowed, activated charcoal may be advised. Give atropine if instructed. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by Poisons Information Centre or a doctor. Do not give anything by mouth to an unconscious person.
Inhalation:	Move person to fresh air. If person is not breathing, call 000, then give artificial respiration, preferably mouth-to-mouth if possible. Call a Poison Information Centre or a doctor for further treatment advice.
Skin Contact:	Remove contaminated clothing and wash skin thoroughly with soap and water. Obtain medical attention if irritation persists. Wash clothing before re-use.
Eye Contact:	Immediately flush eyes with water for 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. If irritation persists, see a doctor.
First Aid Facilities:	Provide washing facilities in the workplace, including an eyewash station and a safety shower.
Symptoms Caused by Exposure:	No data available.
Medical Attention and Special Treatment:	No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Note to Physician:	Carbaryl is an N-methyl carbamate that inhibits cholinesterase. Drugs like 2-Pam (pyridine-2-aldoxime methiodide) are not recommended. If swallowed, activated charcoal may be advised. Give atropine if instructed. Consultation on therapy can be obtained at all hours by calling the Poisons Information Centre (Phone 13 11 26).

5. FIREFIGHTING MEASURES

Suitable Extinguishing Equipment:	Carbon dioxide, dry chemical or water spray. Fight larger fires with water spray.

Specific Hazards Arising from the Chemical:	Keep containers/storage vessels in fire area cooled with water spray. In case of fire, the following can be released: Nitrogen oxides (NOx) Carbon monoxide
Special Protective Equipment and Precautions for Firefighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode. Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water/firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.
Hazchem Code:	2X

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:	Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document. Ensure adequate ventilation.
Environmental Precautions:	Prevent material from entering public sewer systems or any waterways. Do not flush to drains or sewers. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal. Empty containers and product should not be burnt.
Methods and Materials for Containment and Cleaning Up:	Dike spill using suitable absorbent or impervious materials such as sand or clay. Collect and contain contaminated absorbent and place in an appropriate container for disposal. Pump any free liquid into an appropriate closed container and decontaminate tools and equipment following clean-up. Collect washings for disposal.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid breathing spray mist. Avoid contact with skin, eyes, or clothing. Refer to product label for further information.

Conditions for Safe Storage, including any Incompatibilities: Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. Keep away from food and drink. Ensure containers are correctly labelled and securely sealed. Do not store in areas where temperatures frequently exceed 38°C.
Combustible liquid (Class C1)

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Personnel who handle this product in its end-use application should use this product in accordance with its pesticide labelling.

Exposure Standards:

Chemical	TWA (ppm)	TWA (mg/m^3)	STEL (ppm)	STEL (mg/m^3)
Carbaryl	5	5	-	-
Ethanol	1,000	1,880	-	-
Propylene Glycol (vapour & particulates)	150	474	-	-
Propylene Glycol (particulates only)	-	10	-	-

Biological Monitoring: No data available

Engineering Controls: Good ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operators.

Individual Protection Measures, for example, Personal Protective Equipment (PPE): Keep away from foodstuffs, beverages and feed.
When opening the container and preparing the spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat and elbow-length chemical resistant gloves.
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 and contaminated clothing.
Avoid bare skin contact with treated surfaces for 7 days.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White to beige liquid suspension
Odour:	Mild
Boiling Point:	185°C
Melting/Freezing Point:	No data available
Evaporation Rate:	No data available
Vapour Pressure:	23.7 hPa (18 hPa mm Hg)
Relative Density:	Not determined
Bulk Density:	1.1 g/cm³
Viscosity:	No data available
pH:	4.0 – 5.0 (10% aqueous suspension)
Partition Coefficient: n-octanol/water:	No data available
Flash Point:	93.3°C
Flammability (explosive) Limits:	No data available
Auto-Ignition Temperature:	Product is not self-igniting
Decomposition Temperature:	175 - 190°C (exothermic decomposition)
Solubility:	Fully miscible

10. STABILITY AND REACTIVITY

Reactivity:	Not reactive under normal temperature and storage conditions.
Chemical Stability:	Stable under normal temperature and storage conditions.
Possibility of Hazardous Reactions:	Will not occur.
Conditions to Avoid:	Extreme heat, open flames and ignition sources.

Incompatible Materials:	Strong acids; bases.
Hazardous Decomposition Products:	Carbon oxides, Nitrogen oxides, Methyl iso-cyanate (trace: no adverse effects expected).

11. TOXICOLOGICAL INFORMATION

Technical Carbaryl

Acute Toxicity:

Oral Toxicity:	LD_{50} Oral Rat = 699 mg/kg
Dermal Toxicity:	LD_{50} Dermal Rabbit = >4000 mg/kg
Inhalation Toxicity:	LC_{50} Aerosol (4 hr inhalation) Rat = 3.84 mg/L
Skin Corrosion/Irritation:	Non-irritant (rabbits)
Serious Eye Damage/Irritation:	Non-irritant (rabbits)
Respiratory or Skin Sensitisation:	No data available
Germ Cell Mutagenicity:	No data available
Carcinogenicity:	EPA: Group B2: “Likely to be carcinogenic to humans” (Carbaryl) ACGIH: Group A4 NTP: Listed IARC: Group 3 OSHA: Not Listed Carcinogenicity classification is based on an increased incidence of hemangiosarcomas in male mice. The Q1* of carbaryl is 8.75×10^{-4} $(mg/kg/day)^{-1}$.
Reproductive Toxicity:	Carbaryl was not a reproductive toxicant in a 2-generation study in rats. Carbaryl was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in both species but were considered secondary to maternal toxicity.

Mutagenicity:	Carbaryl poses only a slight mutagenic risk based on the overall weight of evidence in a battery of in-vitro and vivo tests.
Specific Target Organ Toxicity (STOT) – single exposure:	No data available
Specific Target Organ Toxicity (STOT) – repeated exposure:	No data available
Additional Toxicological Information:	Reversible cholinesterase inhibition occurred in chronic toxicity studies in rats and dogs. The principal organs affected in rats from long term exposure to high doses of Carbaryl include the urinary bladder, thyroid, kidneys and liver. Carbaryl has been shown to cause tumour in lab animals in lifetime feeding studies

12. ECOLOGICAL INFORMATION

This product is very toxic to aquatic invertebrates.

Technical Carbaryl

Ecotoxicity:

Aquatic Toxicity:	*Acute:* Atlantic Salmon (96-hour LC_{50}): 0.22 mg/L Sheepshead Minnow (96-hour LC_{50}): >0.72 mg/L Mysid Shrimp (48-hour EC_{50}): 0.0057 mg/L Algae (72-hour LC_{50}): 0.340 mg/L *Chronic:* Atlantic Salmon (NOAEC): 0.0068 mg/L Mysid Shrimp (NOAEC): 0.0005 mg/L Algae (NOAEC): 0.045 mg/L
Bird Toxicity:	Canary (LC_{50}): >5000 mg/kg diet Canary (NOAEL): 250 mg/kg bodyweight Mallard Ducks (NOAEC): 343 mg/kg diet
Bee Toxicity:	Honeybee contact (LD_{50}): 1.1 µg/bee Honeybee oral (LD_{50}): 0.11 µg/bee

Persistence and Degradability:	Biodegradation under aerobic laboratory conditions is below detectable limits (BOD_{20} or BOD_{28} is < 2.5%). Biodegradation reached in Closed Bottle Test (OECD Test No. 301D) after 28 days is 1.2%.
Bioaccumulative Potential:	No data available
Mobility in Soil:	Carbaryl is moderately mobile in soils, according to the FAO mobility classification system and has the potential to leach into ground water.

13. DISPOSAL CONSIDERATIONS

Pesticide Disposal:	Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Container Disposal:	Triple rinse containers before recycling or disposal. Add rinsings to spray tank. If recycling or returning for re-use, replace cap and return rinsed clean containers to recycler, designated collection or refilling point. If not recycling or returning for re-use, break, crush, or puncture rinsed container and deliver empty packaging for appropriate disposal to drumMuster, an approved recycling program or accredited waste management facility. Containers and their product must not be burnt. Do not re-use empty containers for any other purpose. Do not dispose of undiluted chemicals on site. Excess and unwanted chemicals should be registered for collection through the national ChemClear® or equivalent collection and disposal program.

14. TRANSPORT INFORMATION

Road and Rail Transport (ADG):	Classified as Dangerous Goods under the ADG7
Marine Transport (IMDG):	≤ 5 L: Not classified as hazardous > 5 L: Classified as Dangerous Goods for transport by sea according to the criteria of the UN Model Regulations for Transport of Dangerous Goods 13th Edition

Air Transport (IATA):	≤ 25 L: Classified as Dangerous Goods for transport by air according to the criteria of the UN Model Regulations for Transport of Dangerous Goods 13th Edition > 25 L: Not permitted to be transported by air.
UN Number:	**2992**
Proper Shipping Name or Technical Name:	CARBAMATE PESTICIDES, LIQUID, TOXIC, N.O.S. (Carbaryl)
Transport Hazard Class:	6.1
Packing Group Number:	III
Environmental Hazards for Transport Purposes:	*Marine Pollutant* Special marking (ADR): Symbols (fish and tree) Special marking (IATA): Symbols (fish and tree) Non-bulk packaging (max capacity of 450 L or less for liquids or 400 kg or less for solids) transported by motor vehicle, rail car or aircraft are excepted from all Marine Pollutants regulations and therefore treated as non-hazardous material. All bulk shipments or any shipment transported partially or entirely by vessel are treated as regulated Marine Pollutants and are shipped according to the requirements listed above.
Special Precautions for User:	Not applicable
Additional Information:	None available
Hazchem Code:	2X

15. REGULATORY INFORMATION

APVMA	Registered according to the Agricultural and Veterinary Chemicals Code Act 1994 (Cwlth) APVMA Product Number: 40146
SUSMP	Schedule 6

16. OTHER INFORMATION

Date of Preparation or Revision: 23 December 2022

Reason for Revision: Updated to GHS7

Abbreviations and Acronyms:

ACGIH – American Conference of Government Industrial Hygienists
ADG7 – Australian Dangerous Goods Code for Road and Rail Transport, 7th Edition
APVMA – Australian Pesticides and Veterinary Medicines Authority
EC – Effective Concentration
EPA – Environmental Protection Agency (USA)
GHS – Globally Harmonized System of Classification and Labelling of Chemicals
IARC – International Agency for Research on Cancer
IC – Inhibitory Concentration
LC – Lethal Concentration
LD – Lethal Dose
NIOSH – National Institute for Occupational Safety & Health
NOAEC – No Observed Adverse Effect Concentration
NOAEL – No Observed Adverse Effect Level
NTP – National Toxicology Program
OSHA – Occupational Safety & Health Administration
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
STEL – Short Term Exposure Limit
SUSMP – Standard for the Uniform Scheduling of Medicines and Poisons
TWA – Time Weighted Average

Data Sources: Manufacturer product safety data and published data

This SDS 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 SDS 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.

The opinions expressed herein are those of qualified experts with the manufacturer. Since the use of this information and of these opinions and the conditions of use of this product are not within the control of AgNova Technologies Pty Ltd, it is the user's obligation to determine the conditions of safe use of the product.

END OF SDS