SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**Dart 800**
Chemical Name of Active Ing:	Diazinon is an organophosphorus derivative.
Product Use:	Insecticide
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	ADAMA New Zealand Ltd
Address:	Level 1/93 Bolt Road Tahunanui, Nelson
Telephone:	+64 3 543 8275
Email:	nzorders@adama.com
Emergency Telephone:	**0800 764 766 (National Poison Centre)** **0800 734 607 (24hr Emergency Response)**
Date of SDS Preparation:	1 July 2022

Section 2. Hazards Identification

This substance is hazardous according to the Hazardous Substances (Hazard Classification) Notice 2020

HSNO Approval No: HSR101016

Pictograms

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement
Flammable liquid Category 4	H227	Combustible liquid.
Acute oral toxicity Category 4	H302	Harmful if swallowed.
Acute dermal toxicity Category 4	H312	Harmful in contact with skin.
Acute inhalation toxicity Category 4	H332	Harmful if inhaled.
Eye irritation Category 2	H319	Causes serious eye irritation.
Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways.
Hazardous to the aquatic environment acute Category 1	H400	Very toxic to aquatic life.
Hazardous to the aquatic environment chronic Category 1	H410	Very toxic to aquatic life with long lasting effects.
Hazardous to soil organisms	H422	Toxic to the soil environment.

Hazardous to terrestrial vertebrates	H431	Very toxic to terrestrial vertebrates.
Hazardous to terrestrial invertebrates	H441	Very toxic to terrestrial invertebrates.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe fumes, vapours or spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid unintended release into the environment.
P280	Wear protective clothing as detailed in Section 8.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P301 + P310 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
P302 + P312 + P352	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell.
P304 + P312 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P313 + P337 + P338 + P351	IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use Dry chemical, carbon dioxide, or foam for extinction.
P391	Collect spillage.

Storage Code	Storage Statement
P405	Store locked up.
P403 + P235	Store in a well-ventilated place. Keep cool.

Disposal Code	Disposal Statement
P501	Wherever possible completely use material by using according to label instructions. Dispose of unwanted product and wastes from spillages as hazardous substances in accordance with local and national regulations using a licensed waste disposal company. Triple rinse containers and add rinsate to spray tank before puncturing and offering for recycling or landfill. Do not allow product to enter waterways. Do not burn product or container.

Section 3. Composition / Information on Ingredients

Ingredients	Wt %	CAS NUMBER.
Diazinon	80%	333-41-5
Other non-hazardous ingredients	To bal	-

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until the product is removed, while holding the eyelid(s) open. If eye irritation persists: Get medical advice.
If on Skin	Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If skin irritation occurs: Get medical advice/ attention.
If Swallowed	If swallowed, do NOT induce vomiting. Wash out mouth thoroughly with water. Never give anything to the mouth of an unconscious person. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. Immediately call a POISON CENTER or doctor/physician.
If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Apply artificial respiration if not breathing. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms:	
Ingestion:	Harmful if swallowed. May be fatal if swallowed and enters airways.
Inhalation:	Harmful if inhaled.
Skin:	Harmful in contact with skin.
Eye:	Causes serious eye irritation.
Chronic:	Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Section 5. Fire Fighting Measures

Hazard Type	Combustible liquid
Hazards from products	There is a slight risk of an explosion from this product is 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 distance. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Suitable Extinguishing media	Dry chemical, carbon dioxide, foam.
Precautions for firefighters and special protective clothing	Do not enter fire area without proper protective equipment, including splash suit with self-contained breathing apparatus.
HAZCHEM CODE	**3Z**

Section 6. Accidental Release Measures

Wear appropriate protective clothing. (see section 8). Evacuate all unnecessary personnel. Extinguish all ignition sources.

Environmental precautions
In the event of a major spill, prevent spillage from entering into drains and water courses. Immediately call the Fire Brigade.

Methods and material for containment and cleaning up
Stop leak if safe to do so and contain spill and prevent material from entering waterways. Absorb onto sand, vermiculite or other suitable absorbent material and place in waste containers. Wash area with water and alkaline detergent then absorb any remaining liquid with further inert material. Dispose of the waste safely in an approved landfill.

Section 7. Handling and Storage

Precautions for Handling:

- Do not handle until all safety precautions have been read and understood.
- Keep away from heat, sparks, open flames or hot surfaces. No smoking.
- Do not breathe fumes, vapours or 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.
- Avoid unintended release into to the environment.
- Wear protective clothing as detailed in Section 8.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Store in the original, unopened container in a cool, dry place, out of direct sunlight and away from stockfeed or foodstuffs and under lock and key.
- DO NOT allow water to enter this container.
- DO NOT rinse the lid with water.
- As a substance with Aquatic Ecotoxicity Classifications, storage of Dart 800 must be carried out in such a manner as to prevent contamination of waterways. It is recommended that The New Zealand Standard for the Management of Agrichemicals (NZS8409) is followed as a means of meeting the secondary containment provisions of the HSNO Emergency Management Regulations.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA		STEL	
Substance	**ppm**	**mg/m3**	**ppm**	**mg/m3**

No ingredients have exposure limits

Workplace Exposure Standard – Time Weighted Average (WES-TWA).The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2017 9TH EDITION.

Engineering Controls
No special ventilation is usually needed when occasionally handling small quantities. However make sure the work environment remains clean and that vapours and mists are minimised.

Personal Protection Equipment

Eyes	Chemical goggles or safety glasses.
Hands and Skin	When mixing and applying wear appropriate protective clothing including cotton overalls buttoned to the neck and wrist and chemical resistant boots. Wear impervious elbow-length gloves.
Respiratory	Usually no respirator is necessary when using this product.
General	Wash hands, arms and face with soap and water before meals and after work. Wash protective clothing after use.

Section 9 Physical and Chemical Properties

Appearance	Yellow to Brown Liquid
Odour	Strong unpleasant odour
Odour Threshold	Not applicable
pH	Not applicable
Boiling Point	Not applicable
Melting Point	Liquid at normal temperatures
Flash Point	Not applicable
Flammability	Not applicable
Upper and Lower Exposure Limits	Not applicable
Vapour Pressure	Not applicable
Vapour Density	Not applicable
Specific Gravity	Approx 1.1 at 20◦C
Solubilities	Emulsifiable
Log P Octanol/water 20°C	Not applicable
Auto-ignition Temperature	Not applicable
Kinematic viscosity mm2/s 40 °C	Not applicable
Particle Characteristics	Not applicable
Volatiles	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Reactivity	This product is unlikely to react or decompose under normal storage conditions.
Conditions to Avoid	Keep isolated from combustible materials, direct sun light. This product should be kept in a cool place, preferably below 30◦C. Containers should be kept dry. Store in the closed original container in a dry, cool well-ventilated area out of direct sun light.
Incompatible Materials	Strong oxidising agents.
Hazardous Decomposition Products	Carbon dioxide, carbon monoxide, nitrogen, oxides of nitrogen. Occasionally hydrogen cyanide gas. Oxides of phosphorus and other phosphorus compounds.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Harmful if swallowed.
Dermal	Harmful in contact with skin.
Inhalation	Harmful if inhaled.
Skin	Not applicable.
Eye	Causes serious eye irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Suspected of damaging fertility or the unborn child.
Germ Cell Mutagenicity	Not applicable.
Aspiration	May be fatal if swallowed and enters airways.
STOT/SE	Not applicable.
STOT/RE	Causes damage to organs through prolonged or repeated exposure.

Rat oral LD50 [mg/kg]: 300-400 (technical grade Diazinon)
Rat dermal LD50 [mg/kg]: 3600
Rabbit inhalation LC50 [mg/L/4h]: 3.5
Chronic Toxicity [mg/kg/day]: 10mg for swine
1000 for rats

Acute Toxicity: Toxic effects of Diazinon are due to the inhibition of acetyl cholinesterase, an enzyme needed for proper nervous system function. The rage of does that results in toxic effects varies widely with formulation and with the individual species being exposed. This transformation may occur in air particularly in the presence of moisture, and by ultraviolet radiation. Most modern Diazinon formulations are stable and do not degrade easily. Symptoms associated with Diazinon poisoning in humans include weakness, headaches, tightness in the chest, blurred vision. Non-reactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrohoea, abdominal cramps, and slurred speech.

Reproductive effects: No data currently available

Teratogenic effects: The data on teratogenic effects due to chronic exposure are inconclusive. One study has shown that injection of Diazinon into chicken eggs resulted in skeletal and spinal deformities in the chicks. Bobwhite quail born from eggs treated in a similar manner showed skeletal deformities but no spinal abnormalities.
Tests with dogs and pigs at higher levels (1.0-10.0 mg/kg/day) revealed gross abnormalities.

Section 12. Ecotoxicological Information

HSNO Classification: Hazardous to the aquatic environment acute Category 1, Hazardous to the aquatic environment chronic Category 1, Hazardous to soil organisms, Hazardous to terrestrial vertebrates, Hazardous to terrestrial invertebrates.

Persistence and degradability	No data available on product
Bioaccumulation	No data available on product
Mobility in Soil	No data available on product
Other adverse effects	No data available on product
Precautions	Do not allow to enter waterways.

Common name: **Diazinon**

Very toxic to aquatic organisms may cause long-term adverse effects to the aquatic environment.

Effects on birds: Birds are significantly more susceptible to Diazinon that other wildlife.
LD50 for birds range from 2.75 mg/kg to 40.8 mg/kg

Effects on aquatic Organisms: Highly toxic to fish. Some evidence shows that saltwater fish are more susceptible than freshwater fish.
LC50 in rainbow trout is 2.6 – 3.2 mg/L
LC50 in fathead minnow and goldfish >15 mg/L

Effects on other Organisms: Highly toxic to bees

Breakdown in soil and groundwater: Low persistence in soil. Half life is 2 to 4 weeks. Bacterial enzymes can speed the breakdown of diazinon and have been used in treating emergency situations such as spills. Diazinon seldom migrates below the top half inch in soil, but in some instances it may contaminate groundwater.

Breakdown in water: Breakdown rate is dependent on the acidity of water. At highly acidic levels, one half of the compound disappeared within 12 hours while in a neutral; solution, it took 6 months to degrade to one half of the original concentration.

Breakdown in vegetation: In plants a low temperature and high oil content tend to increase the persistence of Diazinon. Generally half life is rapid in leafy vegetables, forage crops and grass. The range is form 2 to 14 days. In rice plants only 10% of the residue was present after 9 days. Diazinon is absorbed by plant roots when applied to the soil and translocated to other parts of the plant.

Section 13. Disposal Considerations

Disposal Method: Ensure container is empty. Triple rinse empty container and add rinsate to spray tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush or puncture and bury in a suitable landfill. DO NOT reuse this container for any other purpose.

Precautions and methods to avoid:
Dispose of this product only by using according to the label, or at an approved landfill or other approved facility. Containers and bury in a suitable landfill, away from watercourses or if appropriate, recycle. Do not contaminate ponds, waterways and ditches with product or used container. Do not burn product or container.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in NZ; NZS 5433

Road and Rail Transport

UN No:	3082
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Diazinon)

Air Transport

UN No:	3082
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Diazinon)

Marine Transport

UN No:	3082
Class-primary	9
Packing Group	III
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, (Diazinon)
Marine Pollutant	Yes

Special Provisions:

If the product's individual container is below 5L/kg, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

Section 15 Regulatory Information

This substance is hazardous according to the Hazardous Substances (Hazard Classification) Notice 2020

HSNO Approval Code: HSR101016

HSW (HS) Regulations 2017	**Trigger Quantity/Regulation**
Part 4 Certified Handlers and supervision and training of workers	HSW Reg 4.5 – 4.6 Information, instruction, training and supervision.
Location Certificate	Not required
Signage Trigger Quantities	100L (9.1A)
Fire Extinguishers	Not required
Emergency Response Plan	100L (9.1A)
Secondary Containment	100L (9.1A)
Tracking	Not required
HSNO Varied/Additional Controls	
Variation to Hazardous Property Controls Notice Part 4B	The maximum application rate for this substance is 2400 g diazinon/ha, with a maximum application frequency of 2 times per crop cycle.
77A	(1) For wide-dispersive applications, no person may apply, or engage another person to apply, the substance unless

	that person has given written notice of the proposed application to any person likely to be directly affected by the application, including occupiers and owners of land, dwellings or buildings or property that is immediately abutting the application area. (2) The notice referred to in subclause (1) must- (a) be given at least 2 working days but no more than 4 weeks in advance of each application; and (b) specify the following: (i) the location of application area that the substance will be applied to; (ii) the date and approximate duration of each application; (iii) the steps to be taken by the notified parties to avoid exposure; (iv) the name of the organisation/s undertaking the application; (v) contact details for the person in charge of the application (phone, email or postal address, including a contact number for immediate contact during application).
Hazardous Property Controls Notice 2017	
HPC Notice Part 1	Hazardous Property Controls preliminary provisions
HPC Notice Part 2	Substances restricted to workplaces
HPC Notice Part 3	Hazardous substances in a place other than a workplace
HPC Notice Part 4 Subpart A	Substances that are hazardous to the environment: Site and storage controls
HPC Notice Part 4 Subpart B	Use of substances that are hazardous to the environment
HPC Notice Part 4 Clause 47	Equipment for environmentally hazardous substances must be appropriate
HPC Notice Part 4 Clause 48	Records of application of ecotoxic pesticides and plant growth regulators
HPC Notice Part 4 Clause 52	Agrichemicals that are hazardous to the aquatic environment must not be applied to water
HPC Notice Part 4 Subpart C	Qualifications required for the application of substances that are hazardous to the environment
ACVM Act and Regulations	
ACVM Approval No See www.foodsafety.govt.nz for registration controls	P9990

Section 16 Other Information

Glossary

ACVM	Agricultural Compounds and Veterinary Medicines Act 1997.
EC50	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority.
HSNO	Hazardous Substances and New Organisms Act 1996.
HSW	Health and Safety at Work Act 2015.
HSW (HS) Regulations	Health and Safety at Work (Hazardous Substances) Regulations 2017.
LC50	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD50	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
WES	Workplace Exposure Limit.

References:

1. Hazardous Substances (Safety Data Sheets) Notice 2017
2. Hazardous Substances (Hazard Classification) Notice 2020
3. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
4. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
5. Transport of Dangerous goods on land NZS 5433
6. HSW (Hazardous Substances) Regulations 2017

Disclaimer:

This document has been issued by Adama New Zealand Ltd and serves as their Safety Data Sheet ('SDS'). It is based on information concerning the product which is held by Adama New Zealand Ltd or has been obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. While Adama New Zealand Ltd have taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, Adama New Zealand Ltd accept no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS. The information herein is given in good faith, but no warranty, express or implied is made.

Issue Date: 1 July 2022 Review Date: 1 July 2027