

Safety Data Sheet (SDS) DAT 500 EC/01

According to UN GHS 9th edition

Revision Date: 2022/08/03

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First print date: 2017/04/24

Version: 1.2

SECTION 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

Product identifier:

Identification as on the label/Trade name: **DATATHION 500 EC**

Additional information: Product code DAT 500 EC/01

Relevant identification uses of the substance and uses advised against:

Identified uses: Insecticide.

Uses advised against: Use only as directed.

Details of the supplier of the Safety Data Sheet:

AECI Limited
14 Field Road, LILANTON

Emergency telephone numbers:

Griffon Poison information centre: 082 446 8946
Poisons Information Helpline: 0861 555 777
AECI Limited: (011) 823 8000 (o/h) Spill Tech: 086 100 0366 (a/h)

SECTION 2. HAZARD IDENTIFICATION

Classification of the substances or mixture

The mixture is classified according to:

SANS 10234:2019, Regulation EC 1272/2008 [EU-GHS/CLP]	
Hazard classes/Hazard categories	Hazard statement
Acute toxicity oral (Category 4)	H302
Aspiration hazard (Category 1)	H304
Skin irritation (Category 2)	H315
Skin sensitizer (Category 1)	H317
Serious eye damage (Category 1)	H318
Carcinogenicity (Category 2)	H351
Hazardous to the aquatic environment (Acute 1)	H400
Hazardous to the aquatic environment (Chronic 1)	H410

For full text of H statements see section 16

The most important adverse effects

The most important adverse physiochemical effects: None.

The most important adverse human health effects: May be fatal if swallowed and enters airways and causes serious eye damage.

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Label elements

Hazard pictograms:



Signal Word: Danger

Hazard Statements: H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H351 Suspected of causing cancer. H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe mist/ vapours/ spray. P264 Wash thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 Call a POISON CENTRE/doctor if you feel unwell. P333 + P313 If skin irritation or rash occurs: Get medical advice. P501 Dispose of contents/container to destined disposal area in accordance to local regulation.

Special labelling of certain mixtures: None.

Other hazards: None.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

Ingredients:

Substance name (IUPAC/EC)	CAS –No.	Concentration % by weight	Classification
	EC-No.		EC1272/2008
Malathion	121-75-5	50-53%	Acute toxicity oral (Category 4) H302. Skin sensitizer (Category 1) H317. Aquatic acute 1 H440. Aquatic chronic 1 H410. M=1000
	204-497-7		
Solvent naphtha (petroleum)	64742-94-5	40-50%	Aspiration hazard (Category 1) H304.
	265-198-5		
Calcium dodecyl benzene sulphonate	26264-06-2	1-10%	Acute toxicity oral (Category 4) H302. Skin irritation (Category 2) H315. Serious eye damage (Category 1) H319.
	247-557-8		
Naphthalene	91-20-3	1-5%	Acute toxicity oral (Category 4) H302. Carcinogenicity (Category 2) H351. Aquatic acute 1 H440. Aquatic chronic 1 H410.
	202-049-5		
1,2,4-Trimethyl benzene	95-63-6	<5%	Flammable liquid (Category 3) H226. Acute toxicity oral (Category 4) H302.

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			Skin irritation (Category 2) H315. Eye irritation (Category 2) H319. STOT SE 3 H335. Aquatic chronic 2 H411.
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For full text of H statements see section 16

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4. FIRST AID MEASURES

Description of first aid measures:

In case of inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

In case of eye contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

In case of ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed:

Inhalation: May be fatal if inhaled. If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever. high concentrations of solvent may cause central nervous system depression resulting in headaches, dizziness and nausea.

Ingestions: May be fatal if swallowed.

Skin contact: May cause skin allergies. Repeated exposure may cause skin dryness or cracking. Skin irritation signs and symptoms may include a burning sensation, redness, or swelling

Eye contact: Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed:

Treat symptomatically. Potential for chemical pneumonitis.

Note to physicians: This product is an organic phosphate insecticide. If symptom of cholinesterase inhibition appear, atropine sulphate by injection is antidote. 2-PAM is also antidote and may be administered, but only conjunction with atropine.

SECTION 5. FIRE -FIGHTING MEASURE

Extinguisher media:

Suitable extinguisher media: Use an extinguishing agent suitable for the surrounding fire: use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: High pressure water jet due to contamination risk.

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Special hazards arising from the mixture:

Clear fire area of all non-emergency personnel. Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Some hazardous phosphorus and/or sulphur product may be formed. Incomplete combustion may lead to formation of carbon monoxide as well as unidentified organic and inorganic compounds. Flammable vapours may be present even at temperatures below the flash point. The vapour is heavier than air, spreads along the ground and distant ignition is possible. Will float and can be reignited on surface water.

Advice for fire-fighters:

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Fire fighters should also wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Be sure to use an approved/certified respirator or equivalent. Keep adjacent containers cool by spraying with water.

SECTION 6. ACCIDENTAL RELEASE

Personal precautions, protective equipment and emergency procedures:

Observe all relevant local and international regulations. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

For non-emergency personnel: Isolate hazard area and deny entry to unnecessary or unprotected personnel.

For emergency responders: Avoid contact with skin, eyes and clothing. Do not breathe fumes, vapour. Do not operate electrical equipment.

Environmental precautions:

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

Methods for containment and cleaning up:

For small spills: For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

For large spills: For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Ventilate contaminated area thoroughly. If contamination of site occurs remediation may require specialist advice.

Reference to other sections:

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for information on disposal.

Additional information:

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None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. Avoid prolonged contact with concentrate. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Bulk storage tanks should be diked (bunded). The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Protective measures: Observe directions on label and instructions for use.

Advice on general occupational hygiene: Do not eat drink or smoke when handling this product.

Conditions for safe storage, including incompatibilities:

Store product in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Specific end uses:

Use as directed. Use original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Occupational exposure limits (OEL):

Malathion (CAS 121-75-5) OEL-RL 0.02 mg/m³ (I,V,F), I,V,F Inhalable fraction vapour. Carcinogen, skin- danger of cutaneous absorption.

Solvent naphtha (petroleum) TWA 200 mg/m³ as total hydrocarbon vapour (ACGIH)

Biological exposure indices (BEI): None.

Additional exposure limits under the conditions of use: None.

Exposure control: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. A Risk Assessment should be conducted before handling is to commence to determine specific exposure control.

Appropriate engineering controls:

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Use sealed systems as far as possible. Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Local exhaust ventilation is recommended. Firewater monitors and deluge systems are recommended. Eye washes and showers for emergency use. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers

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are close to the workstation location. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Eye/face protection: Use safety glasses. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Hand protection: Use chemical resistant gloves. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride. For continuous contact, we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity.

Body protection: Wear appropriate clothing for task or operation. Keep working clothes separately.

Respiratory protection: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type A boiling point >65°C (149°F)].

Environmental exposure controls: Prevent product from entry into sewers and water courses.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (form): Liquid.

Colour: Yellowish transparent.

Odour: No information available.

Odour threshold: No information available.

pH (at concentration): 3.21 (100%)

Melting point/range (°C): No information available.

Boiling point/range (°C): No information available.

Flash point (°C): 66 °C

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Evaporation rate: No information available.

Flammability (solid, gas): No information available

Ignition temperature (°C): No information available.

Upper/lower flammability/explosive limits: No information available.

Vapour pressure (20°C): No information available.

Vapour density: No information available.

Specific gravity: 1.048 g/mL.

Water solubility (g/l) at 25°C: 145 mg/ℓ. Miscible with most organic solvents, e.g. alcohols, esters, ketones, ethers, aromatic hydrocarbons. Slightly soluble in petroleum ether and some types of mineral oil. In heptane 65–93 g/ℓ.

n-Octanol/Water partition coefficient: No information available.

Auto-ignition temperature: No information available.

Decomposition temperature: No information available.

Viscosity: 8.04 cP @ 25°C

Physical hazards:

Flammability: Combustible liquid.

Other information:

Fat solubility (solvent-oil to be specified): No information available.

Bulk density: No information available.

Dissociation constant in water (p Ka): No information available.

Oxidation-reduction potential: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity:

The product is stable under normal conditions.

Chemical stability:

Stable under normal storage conditions for 2 years.

Possibility of hazardous polymerization:

Does not occur.

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Conditions to avoid:

Strong oxidising agents.

Incompatible materials:

Incompatible with alkaline materials, residual toxicity may be decreased. Oxidising agents.

Hazardous decomposition products:

Some hazardous phosphorus and/or sulphur product may be formed. Incomplete combustion may lead to formation of carbon monoxide. Decomposed by strong acids and by alkali

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: No Information available.

Excretion: In mammals, following oral administration, a major part of the dose is excreted in the urine and faeces within 24 hours. Degradation is by oxidative desulfuration by liver microsomal enzymes, leading to the formation of malaoxon; malathion and malaoxon are hydrolysed and thus detoxified by carboxylesterases. In insects, metabolism involves hydrolysis of the carboxylate and phosphorodithioate esters, and oxidation to malaoxon.

Information on toxicological effects:

Acute toxicity:

Datathion 500 EC

Acute oral LD₅₀ for rats 856 mg/kg (calculated).

Malathion

Acute oral LD₅₀ for rats 1375-5500 mg/kg (pure), mice 775-3320 mg/kg.

Dermal LD₅₀ (24 h) for rabbits 4100-8800, rats >2000 mg/kg.

Inhalation (4 h) LC₅₀ >5.2 mg/ ℓ.

NOEL In 2 y trials on rats, the only effect seen at 500 ppm (29 mg/kg b.w. daily) was inhibition of cholinesterase in plasma and red blood cells.

Chronic toxicity: No information available.

Skin corrosion/irritation: Not irritating to skin., Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Eye corrosion/ Irritation: No information available.

Respiratory or skin sensitization: No information available.

Germ cell mutagenicity: No information available.

Carcinogenicity: No information available.

Reproductive toxicity: Remarks: Not expected to impair fertility., Causes fetotoxicity in animals at doses which are maternally toxic., Not expected to be a developmental toxicant.

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STOT-single exposure: May cause drowsiness and dizziness.

STOT-repeated exposure: No information available

Aspiration hazard: Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity:

Malathion

Birds: Acute oral LD₅₀ for Bobwhite quail 359 mg/kg.

Dietary LC₅₀ (5 d) for Bobwhite quail 3500 mg/kg diet, and Ring-necked pheasants 4320 mg/kg diet.

Fish: LC₅₀ (96 h) for Bluegill sunfish 54 µg/ℓ, Rainbow trout 180 µg/ℓ, and for Three-spined stickleback 21.7 µg/ℓ.

Daphnia: LC₅₀ (48 h) 1.0 µg/ℓ.

Algae: EC₅₀ (72 h) 13 mg/ℓ.

Bees: Toxic to bees, LD₅₀ (topical) 0.027 µg/bee.

Worms LC₅₀ 613 mg/kg soil.

Other beneficial spp.: LR₅₀ for *Aphidius rhopalosiphi* 0.062 g/ha.

Persistence and degradability:

Malathion is rapidly degraded in the environment. In plants, de-esterified to its mono and di- carboxylic acids, which are cleaved to yield succinic acid, which is subsequently incorporated into plant constituents.

Bioaccumulative potential:

Product has the potential to bioaccumulate.

Mobility in soil

Malathion under normal conditions, it is 99% degraded by hydrolysis within 7 d. Soil DT₅₀ c. 1 d (6 soils); main metabolites are malathion monocarboxylic acid and malathion dicarboxylic acid, which degrade in turn with DT₅₀ <3 d. Solvent floats on water.

Results of PBT& vPvB assessment:

No information available.

Other adverse effects:

No information.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Consider suitable waste recycling, re-use or recovery options. Dispose of in accordance with municipal, provincial and national regulations. Waste Classification and Management Regulations (GN 634 of 2013). Dispose and or manage in accordance with the requirements contained in R634 Waste Classification & Management Regulations, R635 National Norms & Standards for the Assessment of Waste for Landfill Disposal and R636 National Norms & Standards for Disposal of Waste to Landfill.

Product/ packaging disposal:

Treat as hazardous waste and dispose of in accordance with municipal, provincial and national regulations.

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SECTION 14. TRANSPORT INFORMATION

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	3082	3082	3082
UN Proper shipping name:	ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Malathion, hydrocarbons)	ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Malathion, hydrocarbons)	ENVIRONMENTAL HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Malathion, hydrocarbons)
Transport hazard class:	9	9	9
Transport hazard class pictograms:			
Packaging group:	III	III	III
Marine pollutant:	Yes	Yes	Yes
Special precautions for user:	No information	No information	No information
Transport in bulk according to MARPOL 73/78 Annex II and the IBC code	No information	No information	No information

Inland waterways: No information.

Emergency response information: No information.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:

Relevant information regarding authorization: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. UN Recommendations on the Transport of Dangerous Goods Model Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 9, 2019.

ACGIH: American Conference of Governmental Industrial Hygienists (ACGIH).

Relevant information regarding restrictions: None.

EU regulations: Regulation EC 1272/2008 [EU-GHS/CLP] and EU directives 67/548/EEC or EC 1999/45/EC

Other National regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996).

SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes.

National Environmental Management: Waste Act 59 of 2008.

Chemical Safety Assessment carried out? No

SECTION 16. OTHER INFORMATION

Indication of changes:

All sections.

Relevant classification and H statements (number and full text):

Aquatic acute 1: Hazardous to the aquatic environment (Acute 1)

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Aquatic chronic 1: Hazardous to the aquatic environment (Chronic 1)

Aquatic chronic 2: Hazardous to the aquatic environment (Chronic 2)

STOT SE 3- Specific Target Organ Toxicity single exposure (Category 3)

H226 Flammable liquid and vapour. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H315 Cause skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation. H351 Suspected of causing cancer. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.

Training instructions:

Use as indicated on the label, special training may be required for application.

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to readers:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.