Safety Data Sheet (SDS) Fenthion

According to UN GHS 8th Ed
Revision Date: 07/06/2022

First print date: 01/06/2018
Version: 1.1

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

Product identifier:

Identification as on the label/Trade name: Fenthion

Common name: Fenthion (organophosphate) 500g/L EC

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:

Enviro Bio-Chem (Pty) Ltd, 44 Kerk Street,
Lichtenburg, North West, South Africa, 2740

Details of the Registration Holder:

RT Chemicals (Pty) Ltd, 44 Kerk Street,
Lichtenburg, North West, South Africa, 2740

Contact Details:

Telephone: +27 87 231 7261
Fax: 086 541 7948
Website: www.envirobiochem.co.za

Emergency telephone numbers:

24 Hour Emergency Number: Bateleur: +27 83 123 3911
Griffon Poison Information Centre: +27 82 446 8946
Poisons Information Helpline: 0861 555 777
Tygerberg Hospital: +27 21 931 6129

SECTION 2. HAZARD IDENTIFICATION

Classification of the substances or mixture

The mixture is classified according to Regulation (EC) No 1272/2008 EU-GHS/CLP

Hazard classes/Hazard categories	Hazard statement
Flammable Liquid (category 3)	H226
Acute toxicity oral (Category 4)	H302
Aspiration toxicity (Category 1)	H304
Acute toxicity dermal (Category 4)	H312
Acute toxicity inhalation (Category 3)	H331
Skin irritation (Category 2)	H315
Eye damage (Category 1)	H318
STOT SE 3 (Category 3)	H335
STOT SE 3 (Category 3)	H336
Carcinogenic (Category 2)	H351
Germ cell mutagenicity (Category 2)	H341
STOT RE (Category 1)	H372
Aquatic Toxicity Acute (Category 1)	H400
Aquatic Toxicity Chronic (Category 1)	H410

For full text of H statements see section 16

The most important adverse effects

The most important adverse physiochemical effects: Flammable liquid.

The most important adverse human health effects: Harmful if swallowed. Toxic if inhaled. Causes serious eye damage. May be fatal if swallowed and enters airways. Suspected of causing cancer.

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Label elements

Hazard pictograms:
Signal Word: Danger

Hazard Statements:

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H331	Toxic if inhaled
H315	Causes skin irritation
H318	Causes serious eye damage
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H341	Suspected of causing genetic defects
H372	Causes damage to organs through prolonged and repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary Statements:

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.
P233	Keep container tightly closed.
P260	Do not breathe mist/vapours/spray.
P264	Wash hands, forearms, and face 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 release to the environment.
P280	Wear impervious rubber gloves and boots, protective clothing and chemical safety goggles.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303/361/353:	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [shower].
P304+P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P308/313:	If exposed or concerned: Get medical attention.
P331	Do NOT induce vomiting.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up
P501	Dispose of contents/container in accordance with local/regional/ national regulations

Other hazards: None known

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: **Mixture**

Ingredients:

Substance name (IUPAC)	CAS Number.	Concentration % by weight	Classification EC1272/2008
Fenthion	55-38-9	50%	Acute toxicity oral (Category 4) H302 Acute toxicity dermal (Category 4) H302 Acute toxicity inhalation (Category 3) H331. STOT RE (Category 1) H372. Aquatic acute (Category 1) H400. Aquatic chronic (Category 1) H410.
Solvesso 150	63148-62-9	<45%	Aspiration Toxicity (Category 1)H304 Aquatic Chronic (Category 2) (H411) Flammable Liquid. (Category 3) (H226) Eye Irritation (Category 2) (H319) STOT SE 3 (H336) Skin Irritation (Category 2) (H315) Carcinogen (Category 2) (H351) Acute Tox. (Category 4) (H302) STOT SE 3 (H335) Aquatic Acute (Category 1) (H400) Aquatic Chronic (Category 1) (H410)
Calcium dodecylbenzenesulfonate	26264-06-2	<15%	Acute Toxicity Oral (Category 4) H302 Skin Irritation (Category 2) H315 Eye damage (Category 1) H318 Aquatic Chronic (Category 4) H413

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 immediate medical attention.

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 immediately. If advised by doctor, atropine tablets may be administered

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 immediately

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. Loosen tight clothing such as a collar,tie, belt, or waistband.

Most important symptoms and effects, both acute and delayed:

Inhalation: Toxic if inhaled.
Ingestions: Harmful if swallowed.
Skin contact: Harmful in contact with skin.
Eye contact: Harmful in contact with eyes.

Symptom of poisoning: Mild intoxication causes headache, blurred vision, weakness, sweating, mild chest pain, nausea and vomiting. Severe intoxication causes cyanosis (blueness of the skin, as form lack of oxygen), muscular twitching, spasms, miosis (pinpoint pupils) and respiratory paralysis.

Indication of any immediate medical attention and special treatment needed:

Fenthion is an organophosphorus compound, and as such it is a cholinesterase inhibitor. Basic aid: decontamination, symptomatic treatment and if necessary, administration of antidote. Antidote: Atropine sulphate, possibly in conjunction with Toxogonin or Obidoxime (PAM). Monitor respiratory, cardiac, and central nervous system function. Monitor red cell and plasma cholinesterase levels. Administer oxygen if necessary. Watch for pulmonary oedema and delayed neurological symptoms.

SECTION 5. FIRE FIGHTING MEASURES

Extinguisher media:

Suitable extinguisher media: Foam. Dry powder. Carbon dioxide. Water spray.

Small Fire: Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam.

Large Fire: Water spray can be used for larger fires or cooling of unaffected stock but avoid the accumulation of polluted run-off from the site. Use as little water as possible.

Unsuitable extinguishing media**:** Do not use high volume water jet, due to contamination risk.

Special hazards arising from the mixture:

Hazardous decomposition products in case of fire: Refer to Section 10: Stability and Reactivity.

Advice for fire-fighters:

Avoid inhaling hazardous vapours. Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Use an approved/certified respirator or equivalent.
Contain fire control agents for later disposal according to Section 13.
Water can be used to cool unaffected containers.

SECTION 6. ACCIDENTAL RELEASE

Personal precautions, protective equipment, and emergency procedures:

Personal precautions: Avoid contact with skin and eyes. Do not breathe in spray mist / fumes / vapours. Ventilate area of spill or leak, especially in contained areas.
For emergency responders: Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Use an approved/certified respirator or equivalent Avoid contact with eyes and skin. Do not breathe in fumes. Refer to section 8 for recommended personal protective equipment. Evacuate unnecessary personnel.
Emergency procedure: Alert emergency response personnel. Evacuate unprotected spectators and animals.

Environmental precautions:

Stop leak if without risk. Do not touch spilled material. Use a light water spray to reduce vapours.
Prevent entry into drains, watercourses, or confined areas; dike if needed. This product is classified as very toxic to aquatic organisms and will cause long-term adverse effects in the aquatic environment.
If the product contaminates public water, inform appropriate authorities immediately in accordance with local regulations.

Methods for containment and cleaning up:

For small spills Contain spilled material by diking if possible. Absorb with materials such as: sand, earth, vermiculite, or diatomaceous earth.Collect in suitable and properly labelled containers.

For large spills Prevent entry into drains, watercourses, or confined areas. Cover contained spill with an inert absorbent

material such as sand, vermiculite, earth or other appropriate material. Vacuum, scoop, or sweep up material and place the material into a clean, dry, sealable container. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spill material. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. See section 13 for disposal consideration

Reference to other sections:

See section 1 for information on emergency contacts

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for information on disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Keep container dry. Keep out of reach of children

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. Do not store for prolonged periods in direct sunlight. Keep away from excessive heat, open flames, and other sources of ignition.

Specific end uses:

Use as directed. Use original container.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Components	CAS-No.	Exposure Limits	
Fenthion	55-38-9	REL-TWA	0.2 mg/m^3

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: Use outdoors in a well-ventilated area. Provide exhaust ventilation or other engineering controls. Ensure that control systems are properly designed. Comply with occupational safety, environmental, fire and other applicable regulations. Ensure that eyewashstations and safety showers are proximal to the work-station location.

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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection: Avoid contact with eyes. Wear a full-face shield when handling the product or spraying. The use of safety glasses with side shields (or goggles) are recommended if a face shield is not used. This product causes serious eye damage

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.

Body protection: Appropriate impervious clothing is required to prevent skin contact with the product.

Respiratory protection: Use only in well ventilated areas. use a NIOSH approved, air purifying respirator with cartridges /

canisters approved for organic vapours.

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	Liquid
Colour	Clear brown
Odour	Aromatic
Odour threshold	No data available
pH	4.9-5.9 (1% in water)
Melting point / freezing point (° C)	No data available
Boiling point (° C)	No data available
Flash point (° C)	> 38 ˚C
Evaporation rate	No data available
Flammability	No data available
Upper /lower flammability limits	No data available
Vapour pressure	7.4 x 10-6 hPa (at 20 ˚C) (Fenthion).
Vapour density	No data available
Relative density (25°C) g/cm^3	No data available
Water solubility (g/l) at 20°C	Emulsifies in water.
Partition coefficient : n-octanol/water	Log P_{ow} = 4.84 at 20 ˚C (Fenthion).
Auto-ignition temperature (° C)	No data available
Decomposition temperature (° C)	No data available
Viscosity, dynamic (mPa s)	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

SECTION 10. STABILTY AND REACTIVITY

Reactivity:

The product is stable under normal conditions.

Chemical stability:

The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °C, preferably below 30 °C, and not for prolonged periods in direct sunlight.

Possibility of hazardous reactions: No information available.

Conditions to avoid: Avoid excessive heat sources.

Incompatible materials: Should not be applied in combination with strong acidic and strong alkaline products.

Hazardous decomposition products: Toxic materials are formed during exposure to high temperatures, (may include but not limited to carbon monoxide and carbon dioxide).

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution: No data available

Information on toxicological effects:

Assessment of acute toxicity:

The product has not been tested. The data reported is for the main ingredients in the mixture.

Fenthion tech CAS No. 55-38-9
Acute toxicity:

Acute Oral LD50 (rat - male)	250 mg/kg
Acute Dermal LD50 (rat):	586 mg/kg
Acute Inhalation LC50 - 4 h (rat)	0.5 mg/l
Skin irritation/ corrosion (rabbits)	Not a skin irritant
Eye damage / irritation (rabbits)	Not an eye irritant
Respiratory or skin sensitization	Not a skin sensitiser
Germ cell mutagenicity	Suspected of causing genetic defects In vitro tests showed mutagenic effects Test Type: Hamster Test system: Lungs Remarks: Sister chromatid exchange Test Type: Ames test Test system: S. typhimurium Result: Equivocal evidence. Test Type: Human Test system: fibroblast Result: negative Remarks: Unscheduled DNA synthesis
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity STOT single exposure	No data available
Specific Target Organ Toxicity STOT repeated exposure	Ingestion - Causes damage to organs through prolonged or repeated exposure
Aspiration hazard	No data available

Additional Information:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Solvesso 150# CAS No. 64742-94-5	
Acute toxicity:	
Acute Oral LD50 (rat - male)	>2000 mg/kg
Acute Dermal LD50 (rabbit)	>2000 mg/kg
Acute Inhalation LC50 - 4 h (rat)	>5.5 mg/l
Skin irritation/ corrosion (rabbit)	Irritating to skin
Eye damage / irritation (rabbit)	Irritating to eyes
Respiratory or skin sensitization	Not a respiratory or skin sensitizer
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity STOT single exposure	No data available
Specific Target Organ Toxicity STOT repeated exposure	No data available
Aspiration hazard	May be fatal if swallowed and enters airways.

Calcium dodecylbenzenesulphonate CAS No. 26264-06-2	
Acute toxicity:	
Acute Oral LD50 (rat - male)	1300 mg/kg
Acute Dermal LD50 (rat):	2000 mg/kg
Acute Inhalation LC50 - 4 h (rat)	0.31 mg/l
Skin irritation/ corrosion	Irritating to skin

Eye damage / irritation	Irritating to eyes
Respiratory or skin sensitization	Not a respiratory or skin sensitizer
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity STOT single exposure	No data available
Specific Target Organ Toxicity STOT repeated exposure	No data available
Aspiration hazard	No data available

Additional Information:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12. ECOLOGICAL INFORMATION

Fenthion tech CAS No. 55-38-9	
Toxicity	
Birds Acute oral LD_{50} Dietary LC_{50} (5d)	 7.2 mg/kg Bobwhite quail 60 mg/kg Bobwhite quail; 1259 mg/kg Mallard ducks
Aquatic Toxicity Fish LC_{50} (96 hr) Aquatic Toxicity Daphnia LC_{50} (48 hr) Algae EC_{50} (72h) Bee Toxicity LC_{50} (24h) Worms LC_{50} (14d) earthworms	0.83 mg/l (rainbow trout);1.7mg/l (bluegill sunfish) 0.0057mg/l 1.79 mg/l (*Scenedesmus subspicatus*) 0.16 µg/ bee (contact) 375 mg/kg dry soil (*Eisenia foetida*)
Metabolism	Major aerobic metabolites are fenthion sulfoxide, fenthion sulfone followed by the analogous phenol compounds
Persistence and degradability	Degradation occurs rapidly under aerobic conditions
Bioaccumulation potential	No data available
Mobility in soil	No data available

Solvesso 150# CAS No. 64742-94-5	
Toxicity	
Aquatic Toxicity Fish static test LC_{50} (96 h) Naphthalene Aquatic Toxicity Daphnia EC_{50} (48 h) Toxicity to algae –ErC50 (72h) Toxicity to bacteria–EC50 (0.5h)	31.03 mg/l mg/l Bluegill; 0.9mg/l Pink Salmon trout. 0.32 mg/l Crimson spotted Rainbow No data available No data available No data available
Persistence and degradability	Will evaporate and commence degradation on exposure to air.
Bioaccumulation potential	No data available
Mobility in Soil	Highly mobile in soil
Result of PBT and vPvB assessment	No data available

Calcium dodecylbenzenesulphonate CAS No. 26264-06-2	
Toxicity	
Aquatic Toxicity Fish LC_{50} (96 hr) Aquatic Toxicity Daphnia semi static EC_{50} (96 hr) Toxicity to algae – static test EC50 (96h) Toxicity to bacteria EC50 (3h)	1.74 -7.16 mg/l No data available 2.73 – 29 mg/l 500 – 723 mg/l
Persistence and degradability	No data available
Bioaccumulation potential	No data available

Mobility in Soil	No data available
Result of PBT and vPvB assessment	No data available
Other adverse effects	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Product:

Keep out of drains, sewers, ditches, and waterways. Open dumping or burning of this pesticide is prohibited.
Waste resulting from the use of this product cannot be re-used or reprocessed. Refer to container label for disposal information. Treat as hazardous waste and dispose of in accordance with local/ regional/ national/ international regulations.

Container:

Refer to container label for disposal information. Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is cleaned, reconditioned, or destroyed. Rinse empty container three times with a volume of water equal to at least one tenth of that of the container. Pour rinse water into spray tank. Dispose of as hazardous waste. not contaminate water when disposing of rinse water. Dispose of using an approved waste disposal service provider. Follow all local/ regional/ national/ international regulations.

SECTION 14. TRANSPORT INFORMATION

UN Number	1992
UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S (Fenthion 500g/l)
Transport hazard class	3 (6.1)
Packaging group	III
Marine pollutant	Yes

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 8, 2019.

Relevant information regarding restrictions:

EU regulations: Regulation EC 1272/2008 [EU-GHS/CLP]

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.
Act 36 of 1947 of the Republic of South Africa. This product is registered under it is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions

Chemical Safety Assessment carried out? No

SECTION 16. OTHER INFORMATION

Indication of changes:

Classification according to SANS 10234:2019, Regulation EC 1272/2008 [EU-GHS/CLP]
GHS aligned – all sections

Relevant H statements (number and full text):

H331-Toxic if inhaled
H413-May cause long lasting harmful effects to aquatic life

STOT RE (Category 1) – Specific Target Organ Toxicity (Category 1): Causes damage to organs through prolonged and repeated exposure

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.

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product, nor where instructions or recommendations are not followed.