## **Ethion Formulation**



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**Section 1: Identification** 

Product name Ethion Formulation

Manufacturer or supplier's details

Company : MSD

Address 33 Whakatiki Street - Private Bag 908

Upper Hutt - New Zealand

Telephone 0800 800 543

0800 764 766 (0800 POISON) Emergency telephone number: 0800 243 622 (0800

CHEMCALL)

EHSDATASTEWARD@msd.com E-mail address

Recommended use of the chemical and restrictions on use

Recommended use Pharmaceutical Restrictions on use Not applicable

Section 2: Hazard identification

**GHS Classification** 

Acute toxicity (Oral) Category 2

Acute toxicity (Inhalation) Category 3

Acute toxicity (Dermal) Category 2

Serious eye damage/eye irri-

tation

Category 1

Specific target organ toxicity - :

single exposure

Category 1 (Central nervous system)

Specific target organ toxicity - :

repeated exposure

Category 1 (Central nervous system)

Hazardous to the aquatic

environment - acute hazard

Category 1

Hazardous to the aquatic

environment - chronic hazard

Category 1

**GHS** label elements





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Hazard pictograms









Signal word Danger

Hazard statements H300 + H310 Fatal if swallowed or in contact with skin.

H318 Causes serious eye damage.

H331 Toxic if inhaled.

H370 Causes damage to organs (Central nervous system). H372 Causes damage to organs (Central nervous system)

through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

#### Prevention:

P260 Do not breathe mist or vapours.

P262 Do not get in eyes, on skin, or on clothing.

P264 Wash skin 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 protective gloves/ protective clothing/ eye protec-

tion/ face protection.

## Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a

POISON CENTER/ doctor. Rinse mouth.

P302 + P352 + P310 IF ON SKIN: Wash with plenty of water.

Immediately call a POISON CENTER/ doctor.

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P308 + P311 IF exposed or concerned: Call a POISON

CENTER/ doctor. P391 Collect spillage.

## Storage:

P405 Store locked up.

#### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

#### Other hazards which do not result in classification

None known.

#### Section 3: Composition/information on ingredients





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Substance / Mixture : Mixture

## Components

| Chemical name                                | CAS-No.    | Concentration (% w/w) |  |
|--|------------|-----------------------|--|
| Ethion                                       | 563-12-2   | >= 70 -< 90           |  |
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | 78330-21-9 | >= 3 -< 10            |  |

#### Section 4: First-aid measures

General advice In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled, remove to fresh air. If inhaled

> If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Get 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.

Get medical attention immediately. Wash clothing before reuse. Destroy contaminated shoes.

In case of eye contact In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention immediately.

If swallowed If swallowed, DO NOT induce vomiting unless directed to do

so by medical personnel.

Call a physician or poison control centre immediately.

Rinse mouth thoroughly with water.

Never give anything by mouth to an unconscious person.

Most important symptoms

and effects, both acute and

delayed

Fatal if swallowed or in contact with skin.

Causes serious eye damage.

Toxic if inhaled.

Causes damage to organs.

Causes damage to organs through prolonged or repeated

exposure.

Protection of first-aiders First Aid responders should pay attention to self-protection,

> and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Treat symptomatically and supportively. Notes to physician

## Section 5: Fire-fighting measures

Suitable extinguishing media : Water spray

> Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.





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Specific hazards during fire-

fighting

Hazardous combustion prod: :

ucts

Carbon oxides

Sulphur oxides

Oxides of phosphorus

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

Exposure to combustion products may be a hazard to health.

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

Special protective equipment

for firefighters Hazchem Code In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

: 2X

#### Section 6: Accidental release measures

Personal precautions, protec- :

tive equipment and emergency procedures

Evacuate personnel to safe areas.

Only trained personnel should re-enter the area.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

## Section 7: Handling and storage

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust

ventilation.

Advice on safe handling : Do not get on skin or clothing.

Do not breathe mist or vapours.





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Do not swallow. Do not get in eyes.

Wash skin thoroughly after handling.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Keep container tightly closed.

Do not eat, drink or smoke when using this product.

Take care to prevent spills, waste and minimize release to the

environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye

flushing systems and safety showers close to the working

place.

When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

Conditions for safe storage : Keep in properly labelled containers.

Store locked up. Keep tightly closed.

Keep in a cool, well-ventilated place.

Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:

**Explosives** 

#### Section 8: Exposure controls/personal protection

## Components with workplace control parameters

| Components | CAS-No.                   | Value type<br>(Form of<br>exposure) | Control parameters / Permissible concentration | Basis    |  |
|------------|---------------------------|-------------------------------------|--|----------|--|
| Ethion     | 563-12-2                  | TWA                                 | 4 μg/m3 (OEB 4)                                | Internal |  |
|            | Further information: Skin |                                     |  |          |  |
|            |                           | Wipe limit                          | 40 μg/100 cm2                                  | Internal |  |
|            |                           | TWA (Inhal-                         | 0.05 mg/m3                                     | ACGIH    |  |
|            |                           | able fraction                       |  |          |  |
|            |                           | and vapor)                          |  |          |  |

## **Engineering measures**

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Essentially no open handling permitted.

Use closed processing systems or containment technologies. If handled in a laboratory, use a properly designed biosafety cabinet, fume hood, or other containment device if the potential exists for aerosolization. If this potential does not exist,

handle over lined trays or benchtops.





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## Personal protective equipment

Respiratory protection If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection.

Filter type Hand protection

Organic vapour type

Material Chemical-resistant gloves

Remarks Consider double gloving.

Eye protection Wear safety glasses with side shields or goggles.

If the work environment or activity involves dusty conditions,

mists or aerosols, wear the appropriate goggles.

Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or

aerosols.

Skin and body protection Work uniform or laboratory coat.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, dis-

posable suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

## Section 9: Physical and chemical properties

Appearance liquid

Colour No data available

Odour No data available

Odour Threshold No data available

No data available pΗ

Melting point/freezing point No data available

Initial boiling point and boiling

range

No data available

No data available Flash point

Evaporation rate No data available

Flammability (solid, gas) Not applicable

Flammability (liquids) Not applicable

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower No data available





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flammability limit

Vapour pressure No data available

Relative vapour density No data available

Relative density No data available

No data available Density

Solubility(ies)

Water solubility No data available

Partition coefficient: n-

octanol/water

Not applicable

Auto-ignition temperature No data available

No data available Decomposition temperature

Viscosity

Viscosity, kinematic No data available

Explosive properties Not explosive

Oxidizing properties The substance or mixture is not classified as oxidizing.

No data available Molecular weight

Particle size Not applicable

## Section 10: Stability and reactivity

Reactivity Not classified as a reactivity hazard. Chemical stability Stable under normal conditions.

Possibility of hazardous reac-

Can react with strong oxidizing agents.

Conditions to avoid None known.

Incompatible materials Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

## **Section 11: Toxicological information**

Exposure routes Inhalation

> Skin contact Ingestion Eye contact

## **Acute toxicity**

Fatal if swallowed or in contact with skin.



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Toxic if inhaled.

**Product:** 

Acute oral toxicity : Acute toxicity estimate: 14.88 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 0.515 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 70.95 mg/kg

Method: Calculation method

**Components:** 

Ethion:

Acute oral toxicity : LD50 (Rat): 13 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.450 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 62 mg/kg

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Acute oral toxicity : LD50 (Rat): > 2,000 - 3,340 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

**Components:** 

Ethion:

Species : Rabbit

Result : Mild skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

**Components:** 

Ethion:

Result : No eye irritation

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Result : Irreversible effects on the eye





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## Respiratory or skin sensitisation

#### Skin sensitisation

Not classified based on available information.

## Respiratory sensitisation

Not classified based on available information.

#### **Components:**

Ethion:

Exposure routes : Skin contact
Species : Guinea pig
Result : negative

#### **Chronic toxicity**

## Germ cell mutagenicity

Not classified based on available information.

#### **Components:**

Ethion:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: negative

Test Type: In vitro sister chromatid exchange assay in mam-

malian cells Result: negative

Test Type: in vitro micronucleus test

Result: positive

Genotoxicity in vivo : Test Type: Chromosomal aberration

Species: Rat Result: negative

Test Type: In vivo micronucleus test

Species: Mouse Result: positive

Germ cell mutagenicity -

Assessment

Weight of evidence does not support classification as a germ

cell mutagen.

### Carcinogenicity

Not classified based on available information.



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## Components:

Ethion:

Species : Rat
Application Route : Ingestion
Exposure time : 18 Months
Result : negative

Species : Mouse
Application Route : Ingestion
Exposure time : 24 Months
Result : negative

## Reproductive toxicity

Not classified based on available information.

#### **Components:**

Ethion:

Effects on fertility : Test Type: Three-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion

Result: negative

## STOT - single exposure

Causes damage to organs (Central nervous system).

## Components:

Ethion:

Assessment : Causes damage to organs.

#### STOT - repeated exposure

Causes damage to organs (Central nervous system) through prolonged or repeated exposure.

## **Components:**

**Ethion:** 

Target Organs : Central nervous system

Assessment : Causes damage to organs through prolonged or repeated

exposure.



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## Repeated dose toxicity

**Components:** 

Ethion:

Species : Dog

NOAEL : 0.05 mg/kg Application Route : Ingestion Exposure time : 90 Days

**Aspiration toxicity** 

Not classified based on available information.

**Experience with human exposure** 

**Components:** 

Ethion:

Ingestion : Symptoms: Blurred vision, Dizziness, Headache

**Section 12: Ecological information** 

**Ecotoxicity** 

**Components:** 

Ethion:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.18 mg/l

Exposure time: 96 h

Toxicity to daphnia and other : EC50: 0.056 - 7.7 µg/l

aquatic invertebrates

EC50: 0.056 - 7.7 μg/l Exposure time: 48 h

M-Factor (Acute aquatic tox- : 10,000

icity)

M-Factor (Chronic aquatic

10,000

toxicity)

Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Toxicity to fish : LC50 : > 1 - 10 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia sp. (water flea)): > 1 - 10 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

Exposure time. 46 fi

EC50: > 1 - 10 mg/l Exposure time: 72 h

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): > 0.1 - 1

mg/l

Exposure time: 30 d

Remarks: Based on data from similar materials





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Toxicity to daphnia and other :

NOEC (Daphnia magna (Water flea)): > 0.1 - 1 mg/l

aquatic invertebrates (Chron-

Exposure time: 21 d

ic toxicity)

Remarks: Based on data from similar materials

## Persistence and degradability

## **Components:**

**Ethion:** 

Biodegradability : Result: not rapidly degradable

## Alcohols, C11-14-iso-, C13-rich, ethoxylated:

Biodegradability : Result: Readily biodegradable.

#### Bioaccumulative potential

## **Components:**

Ethion:

Partition coefficient: n-

octanol/water

: log Pow: 5.07

## Mobility in soil

No data available

#### Other adverse effects

No data available

## **Section 13: Disposal considerations**

#### **Disposal methods**

Waste from residues : Do not dispose of waste into sewer.

Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

## **Section 14: Transport information**

## International Regulations

**UNRTDG** 

UN number : UN 2810

Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.

(Ethion)

Class : 6.1
Packing group : II
Labels : 6.1
Environmentally hazardous : no

**IATA-DGR** 



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UN/ID No. : UN 2810

Proper shipping name : Toxic liquid, organic, n.o.s.

(Ethion)

Class : 6.1
Packing group : II
Labels : Toxic
Packing instruction (cargo : 662

aircraft)

Packing instruction (passen: 654

ger aircraft)

**IMDG-Code** 

UN number : UN 2810

Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.

(Ethion)

Class : 6.1
Packing group : II
Labels : 6.1
EmS Code : F-A, S-A
Marine pollutant : yes

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

#### **National Regulations**

**NZS 5433** 

UN number : UN 2810

Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.

(Ethion)

Class : 6.1
Packing group : II
Labels : 6.1
Hazchem Code : 2X
Marine pollutant : no

## Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## **Section 15: Regulatory information**

# Safety, health and environmental regulations/legislation specific for the substance or mix-

## **HSNO Approval Number**

HSR100425 Pharmaceutical Active Ingredients Group Standard

#### **HSW Controls**

Certified handler certificate required.

Tracking hazardous substance is required.



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Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

## The components of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

IECSC : not determined

#### Section 16: Other information

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**Further information** 

Sheet

Sources of key data used to compile the Safety Data

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System: GLP - Good Laboratory Practice: IARC - International Agency for Research on Cancer: IATA - International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China: IMDG - International Maritime Dangerous Goods: IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Tem-



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perature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

NZ / EN