according to the Globally Harmonized System



## **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Ethion Formulation

Manufacturer or supplier's details

Company : MSD

Address : Briahnager - Off Pune Nagar Road

Wagholi - Pune - India 412 207

Telephone : +1-908-740-4000

Emergency telephone number: +1-908-423-6000

E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Pharmaceutical Restrictions on use : Not applicable

### 2. HAZARDS IDENTIFICATION

## Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

#### Classification

Highly Toxic, Toxic

GHS Classification

Acute toxicity (Oral) : Category 2

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 2

Skin corrosion/irritation : Category 3

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)

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic : Category 1

according to the Globally Harmonized System



# **Ethion Formulation**

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 3.0
 28.09.2024
 10597654-00008
 Date of first issue: 28.01.2022

hazard

#### **GHS** label elements

Hazard pictograms









Signal word : Danger

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

H316 Causes mild skin irritation. 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 hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or with adequate ventilation.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

P301 + P316 + P330 IF SWALLOWED: Get emergency medi-

cal help immediately. Rinse mouth.

P302 + P352 + P316 IF ON SKIN: Wash with plenty of water.

Get emergency medical help immediately.

P304 + P340 + P316 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get emergency medical

help immediately.

P305 + P354 + P338 + P317 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.

P308 + P316 IF exposed or concerned: Get emergency medical help immediately.

P332 + P317 If skin irritation occurs: Get medical help.

P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

according to the Globally Harmonized System



# **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

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

None known.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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 - < 5

#### 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 : If inhaled, remove to fresh air.

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 mild skin irritation.

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).

Notes to physician : Treat symptomatically and supportively.

#### 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam

according to the Globally Harmonized System



## **Ethion Formulation**

**Revision Date:** Version SDS Number: Date of last issue: 30.09.2023 28.09.2024 10597654-00008 Date of first issue: 28.01.2022 3.0

Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

Specific hazards during fire-

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod-

ucts

Carbon oxides Sulphur oxides

Oxides of phosphorus

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

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

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

Evacuate area.

Special protective equipment:

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

### 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-

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.

#### 7. HANDLING AND STORAGE

according to the Globally Harmonized System



### **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

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.

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.

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** 

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

# Components with workplace control parameters

Components	CAS-No.	Value type (Form of 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- able fraction and vapor)	0.05 mg/m3	ACGIH	

**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.

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 : Organic vapour type

according to the Globally Harmonized System



## **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

Hand protection

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, disposable

suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

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.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : No data available

Odour : No data available

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

No data available

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Not applicable

Upper explosion limit / Upper

flammability limit

No data available

according to the Globally Harmonized System



## **Ethion Formulation**

**Revision Date:** Version SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

Lower explosion limit / Lower :

flammability limit

No data available

Vapour pressure No data available

Relative vapour density No data available

Relative density No data available

Density No data available

Solubility(ies)

Water solubility No data available

Partition coefficient: n-

octanol/water

Not applicable

Auto-ignition temperature No data available

Decomposition temperature No data available

Viscosity

No data available Viscosity, kinematic

Explosive properties Not explosive

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

Molecular weight No data available

Particle characteristics

Particle size Not applicable

# 10. STABILITY AND REACTIVITY

Not classified as a reactivity hazard. Reactivity Chemical stability

Possibility of hazardous reac- :

tions

Stable under normal conditions.

Can react with strong oxidizing agents.

: None known. Conditions to avoid Incompatible materials Oxidizing agents

No hazardous decomposition products are known. Hazardous decomposition

products

#### 11. TOXICOLOGICAL INFORMATION

Information on likely routes of:

exposure

Inhalation Skin contact

> Ingestion Eye contact

# **Acute toxicity**

Fatal if swallowed or in contact with skin.

according to the Globally Harmonized System



## **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

Toxic if inhaled.

**Product:** 

Acute oral toxicity : Acute toxicity estimate: 14.87 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

Causes mild skin irritation.

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

according to the Globally Harmonized System



# **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

### 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

### 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 -

Weight of evidence does not support classification as a germ

Assessment cell mutagen.

## Carcinogenicity

Not classified based on available information.

#### Components:

#### Ethion:

Species : Rat Application Route : Ingestion

according to the Globally Harmonized System



# **Ethion Formulation**

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 3.0
 28.09.2024
 10597654-00008
 Date of first issue: 28.01.2022

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.

### Repeated dose toxicity

## **Components:**

# Ethion:

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

according to the Globally Harmonized System



# **Ethion Formulation**

Version **Revision Date:** Date of last issue: 30.09.2023 SDS Number: 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

## **Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure** 

**Components:** 

Ethion:

Ingestion Symptoms: Blurred vision, Dizziness, Headache

### 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

Exposure time: 48 h

M-Factor (Acute aquatic tox- :

icity)

10,000

M-Factor (Chronic aquatic

toxicity)

10,000

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

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

Exposure time: 96 h

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia sp. (water flea)): > 1 - 10 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50: > 1 - 10 mg/l

Exposure time: 72 h

Toxicity to fish (Chronic tox-

icity)

NOEC: > 0.1 - 1 mg/lExposure time: 30 d

Species: Pimephales promelas (fathead minnow) Remarks: Based on data from similar materials

Toxicity to daphnia and other:

aquatic invertebrates (Chron-

NOEC: > 0.1 - 1 mg/lExposure time: 21 d

ic toxicity)

Species: Daphnia magna (Water flea)

Remarks: Based on data from similar materials

### Persistence and degradability

#### Components:

#### Ethion:

according to the Globally Harmonized System



# **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

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

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.

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

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: :

ger aircraft)

654

according to the Globally Harmonized System



## **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

**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 IMO instruments

Not applicable for product as supplied.

#### 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.

### 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

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

AICS : not determined

DSL : not determined

IECSC : not determined

# **16. OTHER INFORMATION**

Revision Date : 28.09.2024

**Further information** 

Sources of key data used to

compile the Safety Data

Sheet

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

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

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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

according to the Globally Harmonized System



## **Ethion Formulation**

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 3.0 28.09.2024 10597654-00008 Date of first issue: 28.01.2022

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 Temperature; 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.

IN / EN