

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 4.0 Revision Date 14.03.2010

Print Date 28.06.2010

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

Product name : Parathion

Product Number : 45607

Brand : Fluka

Company : Sigma-Aldrich (Shanghai) Trading Co.,Ltd
22A-B Century Ba-Shi Building,
398 Huai Hai Zhong Road
200020 SHANGHAI
CHINA

Telephone : +862161415566

Fax : +862161415567

Emergency Phone # : +8615921213336

E-mail address : china@sial.com

2. HAZARDS IDENTIFICATION**Classification of the substance or mixture**

According to Regulation (EC) No1272/2008

Specific target organ toxicity - repeated exposure (Category 1)

Acute aquatic toxicity (Category 1)

Chronic aquatic toxicity (Category 1)

Acute toxicity, Inhalation (Category 2)

Acute toxicity, Oral (Category 2)

Acute toxicity, Dermal (Category 3)

According to European Directive 67/548/EEC as amended.

Toxic in contact with skin. Toxic: danger of serious damage to health by prolonged exposure if swallowed. Very toxic by inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Label elements

Pictogram



Signal word

Danger

Hazard statement(s)

H372

Causes damage to organs through prolonged or repeated exposure.

H330

Fatal if inhaled.

H300

Fatal if swallowed.

H311

Toxic in contact with skin.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260

Do not breathe dust/fume/gas/mist/vapours/spray.

P264

Wash hands thoroughly after handling.

P273

Avoid release to the environment.

P280

Wear protective gloves/protective clothing.

P284

Wear respiratory protection.

P310

Immediately call a POISON CENTER or doctor/physician.

Hazard symbol(s)	
T+	Very toxic
N	Dangerous for the environment
R-phrase(s)	
R24	Toxic in contact with skin.
R26/28	Very toxic by inhalation and if swallowed.
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)	
S28	After contact with skin, wash immediately with plenty of soap and water.
S36/37	Wear suitable protective clothing and gloves.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60	This material and its container must be disposed of as hazardous waste.
S61	Avoid release to the environment. Refer to special instructions/ Safety data sheets.

Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms	:	Parathion-ethyl Ethylparathione O,O-Diethyl O-(4-nitrophenyl) phosphorothioate
Formula	:	C ₁₀ H ₁₄ NO ₅ PS
Molecular Weight	:	291,26 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration
Parathion				
56-38-2	200-271-7	015-034-00-1	STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; Acute Tox. 2; Acute Tox. 3; H372, H330, H300, H311, H410 T+, N, R24 - R26/28 - R48/25 - R50/53	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Normal measures for preventive fire protection.

Conditions for safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: 2 - 8 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Handle with gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid

Safety data

pH no data available

Melting point no data available

Boiling point	157 - 162 °C at 0,8 hPa
Flash point	120 °C - closed cup
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	< 1 hPa at 25 °C
Density	1,270 g/cm ³
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: 3,8

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

no data available

Materials to avoid

Bases

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Sulphur oxides, Phosphorous oxides
 Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 2 mg/kg

Remarks: Biochemical:Enzyme inhibition, induction, or change in blood or tissue levelsTrue cholinesterase.

LC50 Inhalation - rat - 4 h - 84 mg/m³

Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. Lungs, Thorax, or
 Respiration:Dyspnea.

LD50 Dermal - rabbit - 15 mg/kg

Skin corrosion/irritation

Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation

Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

Genotoxicity in vitro - rat - negative

Unscheduled DNA synthesis

Genotoxicity in vitro - Human - negative

Cytogenetic analysis

Genotoxicity in vitro - Hamster - ovary

Sister chromatid exchange

Genotoxicity in vitro - Ames test - Not mutagenic in Ames Test.

Genotoxicity in vitro - Human - lymphocyte

Sister chromatid exchange

Genotoxicity in vitro - Human - fibroblast
Unscheduled DNA synthesis

Genotoxicity in vivo - rat - Oral
DNA damage

Genotoxicity in vivo - mouse - Oral
DNA damage

Carcinogenicity

Carcinogenicity - rat - Oral
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Endocrine: Adrenal cortex tumors.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Parathion)

Reproductive toxicity

Reproductive toxicity - rat - Oral
Maternal Effects: Uterus, cervix, vagina.

Reproductive toxicity - rat - Oral
Effects on Newborn: Biochemical and metabolic. Effects on Newborn: Other postnatal measures or effects.

Developmental Toxicity - rat - Intraperitoneal
Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Maternal Effects: Other effects.

Developmental Toxicity - rat - Subcutaneous
Effects on Embryo or Fetus: Fetal death.

Developmental Toxicity - rat - Intraperitoneal
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific target organ toxicity - single exposure

no data available

Specific target organ toxicity - repeated exposure

Ingestion - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

no data available

Potential health effects

Inhalation	May be fatal if inhaled. May cause respiratory tract irritation.
Ingestion	May be fatal if swallowed.
Skin	Toxic if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure

Cholinesterase inhibitors can cause heavy salivation and secretion in the lungs, lachrymation, blurred vision, involuntary defecation, diarrhea, tremor, ataxia, sweating, hypothermia, lowered heart rate, and/or a fall in blood pressure as a result of their action at cholinergic nerve sites., Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Salivation, Coma., Tremors, Incoordination., Blurred vision, Lowered blood pressure, Diarrhoea, Headache, Nausea, Vomiting, Dizziness, Drowsiness, Confusion., Weakness, Unconsciousness, Palpitation, Anorexia., Cough, chest pain, Difficulty in breathing, Ataxia., Convulsions, sweating, Muscle cramps/spasms., Change in pupil size.

Additional Information

RTECS: TF4550000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Lepomis macrochirus (Bluegill) - 0,03 mg/l - 96,0 h

Toxicity to daphnia mortality LOEC - Daphnia magna (Water flea) - 0,25 µg/l - 48 h

and other aquatic invertebrates.

EC50 - Daphnia magna (Water flea) - 0,002 mg/l - 48 h

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 3,6 mg/l - 72 h

Persistence and degradability

Bioaccumulative potential

Bioaccumulation Pimephales promelas (fathead minnow) - 260 d
Bioconcentration factor (BCF): 115

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

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

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

ADR/RID

UN-Number: 3278 Class: 6.1 Packing group: I
Proper shipping name: ORGANOPHOSPHORUS COMPOUND, TOXIC, LIQUID, N.O.S. (Parathion)

IMDG

UN-Number: 3278 Class: 6.1 Packing group: I EMS-No: F-A, S-A
Proper shipping name: ORGANOPHOSPHORUS COMPOUND, TOXIC, LIQUID, N.O.S. (Parathion)
Marine pollutant: Severe marine pollutant

IATA

UN-Number: 3278 Class: 6.1 Packing group: I
Proper shipping name: Organophosphorus compound, toxic, liquid, n.o.s. (Parathion)

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H300	Fatal if swallowed.
H311	Toxic in contact with skin.
H330	Fatal if inhaled.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure
N	Dangerous for the environment
T+	Very toxic

R24	Toxic in contact with skin.
R26/28	Very toxic by inhalation and if swallowed.
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Further information

Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
