



SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Azinphos-ethyl

1.2 Other means of identification

Product number -

Other names Bionex; S-3,4-dihydro-4-oxo-1,2,3-benzotriazin-3-ylmethyl
O,O-diethyl phosphorodithioate; Ethyl azinphos

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yien Chemical Technology Co., Ltd
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai
Chemical Industry Zone, Shanghai, 201400, China
Telephone +86-400-133-2688

1.5 Emergency phone number

Emergency phone number +86-400-133-2688

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT
+8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 2, Oral

Acute toxicity - Category 3, Dermal

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Hazard statement(s)

Danger

H300 Fatal if swallowed

H311 Toxic in contact with skin

	H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)	
Prevention	P264 Wash ... thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
	P273 Avoid release to the environment.
Response	P301+P316 IF SWALLOWED: Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P316 Get emergency medical help immediately. 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 appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Azinphos-ethyl	Azinphos-ethyl	2642-71-9	220-147-6	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

The systemic effects of this compound are similar to parathion. It is an extremely potent systemic toxicant via ingestion, inhalation and skin contact. It may cause death or permanent injury after very short exposure to small quantities. (EPA, 1998)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Atropine and enzyme-reactivating agents counteract the effects of azinphos-ethyl.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Self contained breathing apparatus with a full facepiece operated in pressure demand, or other positive pressure mode /should be used in firefighting/. Parathion

5.2 Specific hazards arising from the chemical

Non-Specific -- Organophosphorus Pesticide, n.o.s.) When heated to decomposition, it emits very toxic fumes of sulfur, phosphorus and nitrogen oxides. Container may explode in heat of fire. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

1. Ventilate area of spill or leak. 2. Collect for reclamation, or absorb in vermiculite, dry sand, earth, or a similar material. parathion

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Store in original container, preferably in locked storage, away from children, food, or feed.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Azinphos-ethyl is a colorless crystals. Used as a non-systemic insecticide with good ovicidal properties and long persistence. Used on cotton, citrus, vegetables, potatoes, tobacco, rice, and cereals to control caterpillars, beetles, aphids, spiders and many other insects. Not registered for use in the U.S. (EPA, 1998)
Colour	Colorless needles
Odour	no data available
Melting point/freezing point	53°C
Boiling point or initial boiling point and boiling range	444.7°C at 760 mmHg
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	222.7°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	SOL IN ORG SOLVENTS EXCEPT PETROLEUM ETHER AND ALIPHATIC HYDROCARBONS
Partition coefficient n-octanol/water	log Kow = 3.40
Vapour pressure	4.2E-08mmHg at 25°C
Density and/or relative density	1.43 g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Nearly insoluble in water. What little amount is solubilized will readily hydrolyze.

10.2 Chemical stability

Thermo-stable ... readily hydrolyzed by alkali.

10.3 Possibility of hazardous reactions

The BPS Pesticide incident in Helena resulted in an explosion and death of three firemen. The burning of a 1,000 pound sack of Azinphos Methyl or the flashing of Maneb which was present on the facility may have caused the explosion. Azinphos Ethyl may behave similarly. At elevated temperatures, it will decompose generating toxic gases.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Contact with oxidizers may cause the release of phosphorous oxides. Contact with strong reducing agents, such as hydrides, may cause the formation of flammable and toxic phosphine gas.

10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /phosphorous oxides, sulfur oxides, and nitrogen oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 7 mg/kg
- Inhalation: LD50 Rat inhalation 0.15 mg/L air/4 hr
- Dermal: LD50 Rat percutaneous about 500 mg/kg/24 hr

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: *Oncorhynchus mykiss* (rainbow trout) weight 1.4 g; Conditions: Static bioassay without aeration, 13 deg C, pH 7.2-7.5, water hardness 40-50 mg/L as calcium carbonate and alkalinity of 30-35 mg/L; Concentration: 20 ug/L for 96 hr (95% confidence limit 17-22 ug/L) /Technical, 88%
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: *Daphnia magna* (Water Flea) 1st instar larvae; Conditions: freshwater, static, 21 deg C, pH 7.1, hardness 44 mg/L CaCO₃; Concentration: 4 ug/L for 48 hr (95% confidence interval: 3-5.3 ug/L); Effect: intoxication, immobilization /88% purity technical material
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: The methyl analogue, azinphos methyl, biodegraded in laboratory tests and in soil(1,2) which suggests that azinphos ethyl would also be degraded in the environment(SRC). The half-life of azinphos ethyl in seawater (pH 8.1), river water (pH 7.3) and filtered river water (pH 7.3) was 58, 65 and 36 days, respectively when incubated in the absence of light, in closed 2.5 Liter amber bottles at 22 deg C(3).

12.3 Bioaccumulative potential

An estimated BCF of 80 was calculated in fish for azinphos ethyl(SRC), using a log Kow of 3.40(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate(SRC).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of azinphos ethyl can be estimated to be 170(SRC). According to a classification scheme(2), this estimated Koc value suggests that azinphos ethyl is expected to have moderate mobility in soil. Using a lysimeter to measure the leachability of various pesticides, azinphos ethyl was not detected in leachate from 3,000 individual analyses conducted from 1977-1986 (detection limit 0.001 mg/L)(3). These tests were conducted using 1-1.3 m in height by 0.5 sq m of top soil with a catch base of 1 sq m(3). For soil material, loamy or silty sand with a low humus content was used where the sum of clay and silt amounted to a maximum of 30% (clay below 10%) and the content of organic bound carbon did not exceed 1.5%(3).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN3018 (For reference only, please check.)

IMDG: UN3018 (For reference only, please check.)

IATA: UN3018 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID:
ORGANOPHOSPHORUS
PESTICIDE, LIQUID,
TOXIC (For reference only,
please check.)

IMDG:
ORGANOPHOSPHORUS
PESTICIDE, LIQUID,
TOXIC (For reference only,
please check.)

IATA:
ORGANOPHOSPHORUS
PESTICIDE, LIQUID,
TOXIC (For reference only,
please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)

IMDG: 6.1 (For reference only, please check.)

IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Azinphos-ethyl	Azinphos-ethyl	2642-71-9	220-147-6
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Not Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Not Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.