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-methyl

1.2 Other means of identification

Product number -
Other names O,O-dimethyl S-[(4-oxo-1,2,3-benzotriazin-3(4H)-yl)methyl] phosphorodithioate; Azinphos-methyl; 3-(dimethoxyphosphinothioylsulfanylmethyl)-1,2,3-benzotriazin-4-one

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).

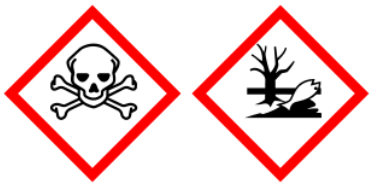
SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 2, Oral
Acute toxicity - Category 3, Dermal
Skin sensitization, Category 1
Acute toxicity - Category 2, Inhalation
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	Danger
Hazard statement(s)	H300 Fatal if swallowed H311 Toxic in contact with skin H317 May cause an allergic skin reaction H330 Fatal if inhaled 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/... P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P272 Contaminated work clothing should not be allowed out of the workplace. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P284 [In case of inadequate ventilation] wear respiratory 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. P333+P317 If skin irritation or rash occurs: Get medical help. P362+P364 Take off contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P320 Specific treatment is urgent (see ... on this label). P391 Collect spillage.
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
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-methyl	Azinphos-methyl	86-50-0	201-676-1	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Acute: extremely toxic. Probable oral lethal dose in humans is 5-50 mg/kg, or between 7 drops and 1 teaspoon for a 70 kg (150 lb.) person. A potent cholinesterase inhibitor which can cause death. (EPA, 1998)

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

A comatose patient who is diaphoretic, has pinpoint pupils and the odor of an insecticide on clothing or breath, and is noted to have muscle fasciculations represents the classic presentation of organophosphate poisoning. ... Specific steps in management include the following. 1. Decontamination. ... 2 Airway. Establish an airway if necessary. ... 3. Respiratory Status. Respiratory distress, in fact, is commonly found in these patients from multiple causes. ... 4. Cardiac Monitoring. ... 5. Cholinesterase Level. ... 6. Pralidoxime. Pralidoxime is the treatment of choice for organophosphate poisoning and should be used for nearly all patients with clinically significant orgnophosphate poisoning, particularly whose patients with muscular fasciculations and weakness. ... 7. Atropine. Atropine is the physiologic antidote for organophosphate poisoning. A trial dose of atropine should be instituted on clinical ground when one suspects organophosphate intoxication. Organophosphate poisoning

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 /when fighting fire/.

5.2 Specific hazards arising from the chemical

Some of the formulations may burn, but none of them ignite easily. Container may explode in the heat of the fire. Rapidly hydrolyzed by cold alkali or cold acid. Unstable at temperatures above 390F. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT wash away into sewer. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Do NOT wash away into sewer. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Personal protection: complete protective clothing including self-contained breathing apparatus.

6.3 Methods and materials for containment and cleaning up

Environmental considerations: Air spill: Apply water spray or mist to knock down vapors. Organophosphorus pesticides, liquid, flammable, toxic; Organophosphorus pesticides, liquid, toxic; Organophosphorus pesticides, solid, toxic

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. 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

Separated from food and feedstuffs. Well closed.Store in a cool dry area, away from excessive heat or open flame. Store 2L formulation above 45 deg F; others above 32 deg F. Store in an area designated specifically for pesticides.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 2 mg/m3, as TWA; (skin); (SEN); BEI issued.MAK: (inhalable fraction): 1 mg/m3; peak limitation category: II(8); skin absorption (H); sensitization of skin (SH); pregnancy risk group: B

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 face shield or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation (not if powder), local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Azinphos methyl is a colorless brown, waxy or white crystalline solid dissolved in a liquid carrier. It is used as a pesticide. It is added to water to create a water emulsifiable liquid. It is toxic by inhalation, skin absorption, and/or ingestion. It is heavier than and insoluble in water. In case of damage to, leaking from containers of this material contact CHEMTREC, 800-424-9300.
Colour	Yellowish crystals
Odour	Odorless
Melting point/freezing point	72-74°C
Boiling point or initial	421.3°C at 760 mmHg

boiling point and boiling range	
Flammability	Noncombustible solid
Lower and upper explosion limit/flammability limit	no data available
Flash point	208.6°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	less than 1 mg/mL at 66° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 2.75
Vapour pressure	Negligible at 20C (EPA, 1998)
Density and/or relative density	1.51g/cm3
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes above 200°C . Decomposes on burning. This produces toxic and corrosive fumes including nitrogen oxides, phosphorus oxides and sulfur oxides.

10.2 Chemical stability

Solutions in ethanol and propylene glycol are stable for at least 3 weeks.

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

Incompatibilities: Contact with strong oxidizers may cause fires and explosions.

10.6 Hazardous decomposition products

Decomposes at elevated temperatures.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Guinea pig male oral 80 mg/kg
- Inhalation: LC50 Rat inhalation 0.15 mg/L air/4 hr
- Dermal: LD50 Rat percutaneous 150-200 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

Cancer Classification: Not Likely to be Carcinogenic to Humans

Reproductive toxicity

no data available

STOT-single exposure

The substance may cause effects on the nervous system. This may result in convulsions and respiratory failure. Cholinesterase inhibition. Exposure could cause unconsciousness and death. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Cholinesterase inhibition. Cumulative effects are possible. See Acute Hazards/Symptoms.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Ictalurus melas (Black bullhead) weight 1.2 g; Conditions: static without aeration, 18 deg C, pH 7.2-7.5, alkalinity 30-35 mg/L, hardness 40-50 mgL as CaCO3; Concentration: 3,500 ug/L for 96 hr (95% confidence interval: 2,920-4,950 ug/L) /Technical material, 88-100%
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea) 1st instar larvae; Conditions: freshwater, flow through; Concentration: 4.4 ug/L for 48 hr (95% confidence interval: 3.9-5.8 ug/L); Effect: intoxication, immobilization /50% purity wettable powder formulation
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Azinphosmethyl was degraded in batch and continuous culture by mixed enrichment cultures of microorganisms that were collected from soil, raw sewage, a trickling filter, activated sludge, and settled sludge(1). Azinphosmethyl concentration decreased from 99 mg/L to 49 mg/L after 4 days incubation in a stirred flask containing azinphosmethyl as the sole carbon source and a mixed culture(1). The main degradation products of azinphosmethyl in soil and by selected soil microorganisms are benzazimide, thiomethylbenzazimide, bis-(benzazimidyl-methyl) disulfide, and anthranilic acid(2). Using analytical grade and diluted emulsifiable concentrated azinphosmethyl, at a concentration of 15 ppm, incubated at 30 deg C in Carrington silt loam degradation was 95% in 6 and 22 days, respectively(3). After 10 weeks, no residual azinphosmethyl was detected(3). The half-life of azinphosmethyl in seawater (pH 8.1) was 26 days when incubated in the absence of light, while the half-life in river water (pH 7.3) was 42 days, 35 days (pH 7.3) in filtered river water when incubated in closed 2.5 Liter amber bottles at 22 deg C(4).

12.3 Bioaccumulative potential

An estimated BCF of 30 was calculated in fish for azinphosmethyl(SRC), using a log Kow of 2.75(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

The Koc of azinphosmethyl in five European soils was measured in the range of 487 to 4,644(1). Azinphosmethyl also had Koc values of 1990 (75.0% clay, 3.29% organic

carbon), 783 (22.6% clay, 2.39% organic carbon), 570 (17.0% clay, 3.32% organic carbon), 630 (20.3% clay, 1.36% organic carbon) and 1700 (6.0% clay, 4.43% organic carbon) in five European soils(2). Using data from the 1993 UK database, Koc values for azinphosmethyl were 298 to 3406(3). According to a classification scheme(4), this Koc data suggests that azinphosmethyl is expected to have moderate to slight mobility in soil. Measurable residues were found in sediment samples after application to the surface of littoral enclosure mesocosms; the sediment and water were identified as the most important sorptive compartments(5). The compound is not likely to leach to groundwater except in areas of high recharge such as karst(6).

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: UN2784 (For reference only, please check.)	IMDG: UN2784 (For reference only, please check.)	IATA: UN2784 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C (For reference only, please check.)	IMDG: ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C (For reference only, please check.)	IATA: ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)	IMDG: 3 (For reference only, please check.)	IATA: 3 (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-methyl	Azinphos-methyl	86-50-0	201-676-1
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)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.
Korea Existing Chemicals List (KECL)			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/

Other Information

The technical material is a brown waxy solid.Depending on the degree of exposure, periodic medical examination is suggested.The symptoms of acute poisoning do not become manifest until 0.5 to several hours.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Do NOT take working clothes home.Carrier solvents used in commercial

formulations may change physical and toxicological properties.If the substance is formulated with solvents also consult the ICSCs of these materials.

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

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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.