Chemical Safety Data Sheet MSDS / SDS

Diazinon SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Diazinon

CAS: 333-41-5

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

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

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s)

H302 Harmful if swallowed
H400 Very toxic to aquatic life
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.
P273 Avoid release to the environment.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P391 Collect spillage.

Storage

none

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.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Diazinon
Common names and synonyms:	Diazinon
CAS number:	333-41-5
EC number:	206-373-8
Concentration:	100%

SECTION 4: First aid measures

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

Rinse mouth. Give a slurry of activated charcoal in water to drink. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention .

Most important symptoms/effects, acute and delayed

LIQUID: POISONOUS IF SWALLOWED. Irritating to skin and eyes. (USCG, 1999)

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

Airway protection. Insure that a clear airway exists. Intubate the patients and aspirate the secretions with a large-bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe

poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. Organophosphate pesticides

SECTION 5: Firefighting measures

Suitable extinguishing media

Fire Extinguishing Media: dry chemical, foam, carbon dioxide.

Specific hazards arising from the chemical

Not flammable. POISONOUS GASES ARE PRODUCED WHEN HEATED. Oxides of sulfur and of phosphorus are generated in fires. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in dry sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

In case of spill or leak: For small spills, sweep up keeping dust to a minimum, and place in a approved chemical container. Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up, and place in a chemical container. Seal the container and handle in an approved manner. Flush the area with water to remove any residue. Do not allow wash water to contaminate water supplies. Wear appropriate PPE. Diazinon 50W

SECTION 7: Handling and storage

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.

Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from strong oxidants, strong acids, bases and food and feedstuffs. Keep in a well-ventilated room.Store in original container only in cool, dry, well-ventilated, secure area out of reach of children and animals.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.01 mg/m3, as TWA; (skin); A4 (not classifiable as a human carcinogen); BEI issued.MAK: (inhalable fraction): 0.1 mg/m3; peak limitation category: II(2); skin absorption (H); pregnancy risk group: C

Biological limit values

no data available

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.

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

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection. Avoid inhalation of mist.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid; light to dark brown. Sinks in water. Commercial solutions can contain ethanol/xylene/acetone with a flash point in the range 82-105° F.
Colour:	Colorless oil
Odour:	Faint ester-like odor
Melting point/freezing point:	>120°C (dec.)
Boiling point or initial boiling point and boiling range:	306°C
Flammability:	Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	2°C
Auto-ignition temperature:	> 400 deg C. /Diazinon 50W/
Decomposition temperature:	at 120°C°C
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	less than 1 mg/mL at 75° F (NTP, 1992)

Partition coefficient n-octanol/water:	log Kow = 3.81
Vapour pressure:	0.0001 mm Hg (NIOSH, 2016)
Density and/or relative density:	1.117
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes above 120°C . This produces toxic fumes including nitrogen oxides, phosphorus oxides and sulfur oxides. Reacts with strong acids and alkalis with possible formation of highly toxic tetraethyl thiopyrophosphates. Reacts with strong oxidants.

Chemical stability

More stable in alkaline formulations, then when at neutral or acid pH.

Possibility of hazardous reactions

PRACTICALLY NONFLAMMABLE.Organothiophosphates, such as DIAZINON, are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides. Partial oxidation by oxidizing agents may result in the release of toxic phosphorus oxides. POISONOUS GASES ARE PRODUCED WHEN HEATED. Oxides of sulfur and of phosphorus are generated in fires (USCG, 1999). DIAZINON is incompatible with the following: Strong acids & alkalis, copper-containing compounds [Note: Hydrolyzes slowly in water & dilute acid.] (NIOSH, 2016).

Conditions to avoid

no data available

Incompatible materials

Strong acids and alkalis, copper containing compounds [Note: Hydrolyzes slowly in water and dilute acid].

Hazardous decomposition products

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

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat male oral 1340 mg/kg

Inhalation: LC50 Rat inhalation >5540 mg/cu m 4 hr

Dermal: LD50 Rat acute percutaneous > mg/kg 2150; rabbit acute percutaneous 540-650 mg/kg

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 is mildly irritating to the eyes and skin. The substance may cause effects on the nervous system. This may result in

convulsions and respiratory depression. Cholinesterase inhibition. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

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

Aspiration hazard

A harmful contamination of the air will not or will only very slowly be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill) weight 1 g; Conditions: freshwater, static, 18 deg C, pH 7.1, hardness 44 mg/L CaCO3; Concentration: 362 ug/L for 24 hr (95% confidence interval: 270-480 ug/L) /92% purity formulation

Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea) age <24 hr neonate; Conditions: freshwater, static, 21 deg C; Concentration: 6.1 ug/L for 48 hr (95% confidence interval: 4.8-7.4 ug/L); Effect: intoxication, immobilization /100% purity formualtion

Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (Green Algae); Conditions: freshwater, static; Concentration: 3700 ug/L for 7 days; Effect: population abundance /formulation

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Half-lives reported for diazinon in sterile (non-sterile) soils were 12.5 weeks (<1 week) in sandy loam and 6.5 weeks (2 weeks) in organic soil(1). Diazinon disappeared more quickly from unsterilized natural water (12 weeks) than from unsterilized distilled or sterilized natural water (>16 weeks), suggesting that degradation is both biological and chemical in nature in natural waters(2). Percent theoretical biological oxygen demand (BOD) was 16% for diazinon incubated with municipal sewage for 7.5-8.3 days(3). Diazinon, present at 100 mg/L, reached 0% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(4).

Bioaccumulative potential

BCF values were measured in the following species: topmouth gudgeon (Pseudodorasbora parva), 152, silver crucian carp (Cyprinus auratus), 36.6, carp (Cryprinus carpio), 65.1, guppy (Lebisters reticuatus) 17.5, crayfish (Procambarus clarkii), 4.9, red snail (Indoplanorbis exustus), 17.0, pond snail (Cipangopoludina malleata), 5.9(1); a fish (Fundulus heteroclutus), 10(2); species

unreported, 35(3); carp, 120, rainbow trout, 63, loach, 26, shrimp, 3(4); sheepshead minnow, 200(5); eel(Anguilla anguilla) muscle and liver, 1600 and 800, respectively(6); perch 27(7); earthworm 8(8); fish from the Philipines, 12(9). According to a classification scheme(10), the range of experimental BCFs suggests the potential for bioconcentration in aquatic organisms is low to moderate(SRC).

Mobility in soil

The Koc for diazinon ranged from 40-432, and averaged 191 for 3 soils(1); in one sediment, the Koc was 250(1). For sandy loam(2.0% OM, pH 5.4), silt loam(1.4% OM, pH 7.0), silt loam(1.8% OM, pH 6.5) and sand(1.4% OM, pH 7.0), the Kocs were 1,539, 1,007, 1,653, and 1,842, respectively, with a recommended value of 1520(2). The Koc for diazinon was found to be 1589 in an Hungarian brown forest soil(3). The Koc for diazinon in two New Zealand topsoils was 165.22 and 324.49(4); the Koc in a New Zealand subsoil was 1447.47(4). According to a classification scheme(5), these experimental Koc values suggest that diazinon is expected to have moderate to low mobility in soil(SRC). Diazinon was given a leaching index of 2.0 (<20 cm movement/yr with 150 cm of annual rainfall)(6). Diazinon is reported to be fairly strongly adsorbed onto soil with low mobility(7).

Other adverse effects

no data available

SECTION 13: Disposal considerations

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

UN Number

ADR/RID: UN1648 (For reference only, please check.)
IMDG: UN1648 (For reference only, please check.)

IATA: UN1648 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ACETONITRILE (For reference only, please check.)
IMDG: ACETONITRILE (For reference only, please check.)
IATA: ACETONITRILE (For reference only, please check.)

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.)

Packing group, if applicable

ADR/RID: II (For reference only, please check.)
IMDG: II (For reference only, please check.)
IATA: II (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

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

Depending on the degree of exposure, periodic medical examination is suggested.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.Carrier solvents used in commercial formulations may change physical and toxicological properties.Do NOT take working clothes home.