

Safety Data Sheet acc. to OSHA HCS

Date of issue: 04/15/2025

Revision date 04/15/2025

1 Identification

- **Product identifier**
- **Trade name:** Dichlorvos
- **Synonym**
phosphoric acid, 2,2-dichloroethenyl dimethyl ester; DDVP; Dichlorovinyl Dimethyl Phosphate; NSC 6738
- **CAS Number:**
62-73-7
- **Other means of identification**
- **Article number:** 23727
- **EC number:**
200-547-7
- **Index number:**
015-019-00-X
- **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal opening times: +1 (734) 971-3335
US/CANADA: 800-424-9300
Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute toxicity - oral 3 H301 Toxic if swallowed.
Acute toxicity - dermal 3 H311 Toxic in contact with skin.
Acute toxicity - inhalation 2 H330 Fatal if inhaled.



GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

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GHS07

Sensitization - skin 1

H317 May cause an allergic skin reaction.

· **Label elements**

· **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS06



GHS07



GHS09

· **Signal word** Danger

· **Hazard-determining components of labeling:**

Dichlorvos

· **Hazard statements**

H301+H311 Toxic if swallowed or in contact with skin.

H330 Fatal if inhaled.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves / protective clothing.

P284 [In case of inadequate ventilation] wear respiratory protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P330 Rinse mouth.

P302+P352 If on skin: Wash with plenty of water.

P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.

P312 Call a poison center/doctor if you feel unwell.

P320 Specific treatment is urgent (see on this label).

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

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P391 Collect spillage.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 4

Fire = 0

Reactivity = 0

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· HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

· Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· Classification according to (d)(1)(ii) of § 1910.1200

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· Hazards not otherwise classified

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

3 Composition/information on ingredients

· Chemical characterization: Substances

· CAS No. Description

62-73-7 Dichlorvos

· Identification number(s)

· **EC number:** 200-547-7

· **Index number:** 015-019-00-X

4 First-aid measures

· Description of first aid measures

· General information:

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· Most important symptoms and effects, both acute and delayed

No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

· Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

· Special hazards arising from the substance or mixture

67-56-1 During heating or in case of fire poisonous gases are produced.

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- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

1.8 mg/m³

- **PAC-2:**

20 mg/m³

- **PAC-3:**

200 mg/m³

- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store in accordance with information listed on the product insert.
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

62-73-7 Dichlorvos

PEL	Long-term value: 1 mg/m ³ Skin
REL	Long-term value: 1 mg/m ³ Skin
TLV	Long-term value: 0.1* mg/m ³ , 0.01 ppm Skin; DSEN; BEI-C;* inh. fraction + vapor, A4

Ingredients with biological limit values:

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BEI	70 % of baseline Medium: red blood cells Time: discretionary Parameter: Cholinesterase activity (nonspecific)
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Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Appropriate engineering controls No further data; see section 7.

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Not required.

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9 Physical and chemical properties

Information on basic physical and chemical properties

General Information	
Physical state	Solid
Color:	According to product specification
Odor:	Alcohol-like
Structural Formula	$(C_2H_3O)_2 - P(=O)(Cl)_2$
Molecular Weight	220.98 g/mol
Storage Buffer	
Odor threshold:	Not determined.
Formulation	A solution in methanol
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	120 °C (248 °F)
Flammability:	Product is not flammable.
Explosion limits:	
Lower:	5.5 Vol %
Upper:	44 Vol %
Flash point:	Not applicable.
Decomposition temperature:	Not determined.
pH-value:	Not applicable.
Viscosity:	
Kinematic:	Not applicable.
SOLUBILITY	Chloroform: soluble; Ethyl Acetate: soluble; Methanol: soluble; Water: soluble
Dynamic:	Not applicable.
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	9 g/l
Partition coefficient (n-octanol/water):	Not determined.
Vapor pressure at 20 °C (68 °F):	0.016 hPa (0 mm Hg)
Vapor pressure at 50 °C (122 °F):	0.2 hPa
Density at 20 °C (68 °F):	1.42 g/cm ³ (11.8499 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Particle characteristics	Not determined.

Other information

Appearance:	
Form:	neat oil
Important information on protection of health and environment, and on safety.	
Ignition temperature:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Organic solvents:	100.0 %
VOC content:	100.00 %
Solids content:	100.0 %
Change in condition	
Evaporation rate	Not applicable.

10 Stability and reactivity

- Reactivity No further relevant information available.

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- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** oxidizing agents, reducing agents
- **Hazardous decomposition products:**
carbon dioxide, carbon monoxide, hydrogen chloride, phosphorous oxides

11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	56 mg/kg (rat)
Dermal	LD50	300 mg/kg
Inhalative	LC50/4 h	0.5 mg/l

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Oral	LD50	17 mg/kg (rat)
Dermal	LD50	107 mg/kg (rat)
	Intraperitoneal LD50	15 mg/kg (rat)
	Subcutaneous LD50	24 mg/kg (mouse)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
- **Interactive effects** No interactive effects between components are known.

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

2B

- **NTP (National Toxicology Program)**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

- **Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects**

- **Remark:** Very toxic for fish

- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (Assessment by list): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Very toxic for aquatic organisms

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**

- **DOT**

- **IMDG, IATA**

NA2783

UN2783

- **UN proper shipping name**

- **DOT**

- **IMDG**

- **IATA**

Organophosphorus pesticides, solid, toxic
ORGANOPHOSPHORUS PESTICIDE, SOLID,
TOXIC (Dichlorvos), MARINE POLLUTANT
Organophosphorus pesticide, solid, toxic (Dichlorvos)

- **Transport hazard class(es)**

- **DOT**



- **Class**

6.1 Toxic substances

- **Label**

6.1

- **IMDG**



- **Class**

6.1 Toxic substances

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· Label	6.1
· IATA	
	
· Class	6.1 Toxic substances
· Label	6.1
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	Yes (DOT) Symbol (fish and tree)
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg
· Hazardous substance:	10 lbs, 4.54 kg
· Remarks:	Special marking with the symbol (fish and tree).
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
· IATA	
· Remarks:	When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.
· Special precautions for user	Warning: Toxic substances
· Hazard identification number (Kemler code):	60
· EMS Number:	F-A,S-A
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· UN "Model Regulation":	UN 2783 ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (DICHLORVOS), 6.1, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
No further relevant information available.

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· **Sara**· **Section 355 (extremely hazardous substances):**

Substance is listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is listed.

· **TSCA (Toxic Substances Control Act):**

ACTIVE

· **Hazardous Air Pollutants**

Substance is listed.

· **Chemicals known to cause cancer:**

Substance is listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

B2

· **TLV (Threshold Limit Value)**

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· **Department issuing SDS:** Environment protection department.· **Contact:** -· **Date of previous version** 01/03/2024· **Date of preparation** 04/15/2025· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

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LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Acute toxicity - oral 3: Acute toxicity – Category 3
Acute toxicity - inhalation 2: Acute toxicity – Category 2
Sensitization - skin 1: Skin sensitisation – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· *** Data compared to the previous version altered.**

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