

1. Identification

Product identifier NUVAN DIRECTED SPRAY AEROSOL

Other means of identification

SDS number 386

Recommended use Organophosphate insecticide.

Recommended restrictions This is a Restricted Use Pesticide and is for use by licensed applicators only. Keep out of the Reach of Children!

Product registration number 5481-13

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name AMVAC Chemical Corporation

Address 4100 E Washington Blvd
Los Angeles, CA 90023 USA

Telephone AMVAC Chemical Corp 323-264-3910
AMVAC Chemical Corp 323-268-1028 (FAX)

Website www.Amvac-Chemical.com

E-mail CustServ@Amvac-Chemical.com

Emergency phone number Medical 888-681-4261
CHEMTREC® (USA+Canada) 800-424-9300
Product Use 888-462-6822
CHEMTREC® (Outside USA) +1-703-527-3887

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Acute toxicity, oral Category 4
Acute toxicity, inhalation Category 4
Serious eye damage/eye irritation Category 2B
Germ cell mutagenicity Category 1B
Carcinogenicity Category 1A

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Harmful if swallowed. Causes eye irritation. Harmful if inhaled. May cause genetic defects. May cause cancer. Very toxic to aquatic life.

Precautionary statement

Prevention Do not handle until all safety precautions have been read and understood. Avoid breathing mist. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Rinse mouth. If eye irritation persists: Get medical advice/attention. Collect spillage.

Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

Supplemental information United States Environmental Protection Agency Labeling Requirements:

HAZARDS TO HUMANS AND DOMESTIC ANIMALS.

CAUTION. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear long-sleeved shirt, long pants, shoes and socks. Wash thoroughly after handling and before eating, drinking, chewing gum, or using tobacco. Remove and launder contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN! Do not apply to surfaces contacted frequently by children or allow them in areas where surfaces are not yet dry. Avoid contamination of food/feed and foodstuffs. Do not treat areas where food or food/feed crops are growing. Do not use on pets or animals. Do not smoke while using Do not spray directly on the skin or on animals. Do not apply inpatient rooms or rooms occupied by the elderly or infirm. Do not allow children or pets to contact treated surfaces until dry.

ENVIRONMENTAL HAZARDS

This product is toxic to fish, birds, and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

PHYSICAL OR CHEMICAL HAZARDS

Contents under pressure. Keep away from heat, sparks and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130 F may cause bursting. Not for use around electrical equipment.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
DDVP (DICHLORVOS)		62-73-7	0.5

Additional components

Chemical name	CAS number	%
Inert ingredients	N/A	99.5

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Acute cholinesterase depression may be evidenced by headache, nausea, vomiting, diarrhea, abdominal cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, tightness in chest, weakness, muscle twitching and confusion; in extreme cases, unconsciousness, convulsions, severe respiratory depression and death may occur. Dizziness, loss of concentration, and frostbite. CNS depression and cardiac arrhythmia at higher exposure levels to the propellant. Asphyxiation can occur in confined spaces if the vapors displace air.
Indication of immediate medical attention and special treatment needed	This is a cholinesterase inhibiting organophosphorous pesticide. Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed. The following antidotes are generally accepted: atropine and oximes. Contact the nearest POISON Control Center for medical advice.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Containers should be cooled with water to prevent vapor pressure build up.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Wear appropriate protective equipment and clothing during clean-up. Ventilate the contaminated area. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Evacuate the area until vapor has been dispersed. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not re-use empty containers. Avoid breathing mist. Avoid contact with eyes. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Level 3 Aerosol. Store locked up. Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in original tightly closed container. Store in a well-ventilated place. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
DDVP (DICHLORVOS) (CAS 62-73-7)	PEL	1 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
DDVP (DICHLORVOS) (CAS 62-73-7)	TWA	0.1 mg/m ³	Inhalable fraction and vapor.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
DDVP (DICHLORVOS) (CAS 62-73-7)	TWA	1 mg/m ³

Biological limit values	No biological exposure limits noted for the ingredient(s).
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Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

DDVP (DICHLORVOS) (CAS 62-73-7) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

DDVP (DICHLORVOS) (CAS 62-73-7) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

DDVP (DICHLORVOS) (CAS 62-73-7) Can be absorbed through the skin.

Appropriate engineering controls General ventilation normally adequate. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical goggles are recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Nitrile gloves are recommended.

Other

The following clothing is required: overalls or pants and long-sleeved shirt, chemical resistant gloves (preferably nitrile), chemical resistant boots. For added protection a chemical resistant apron and a full face shield are recommended. If there is a risk of splashing, misting or release the following additional PPE is required: two piece hooded chemical resistant suit with either a full face respirator or a SCBA. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions are available, use detergent and hot water. Keep and wash PPE separately.

Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Not available.

General hygiene considerations

When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Clear aerosol.
Physical state	Liquid.
Form	Aerosol.
Color	Clear colorless
Odor	Slight ethereal and sweet odor.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	> 175 °F (> 79 °C) Cleveland Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	4.46E+03 mm Hg @ 70 F
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Auto-ignition temperature	Not available.

Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	< 1 g/cm ³
Flammability class	Combustible IIIA estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known. This product may emit hazardous fumes of hydrogen chloride, carbon oxides, and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS when these conditions are present.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes eye irritation.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics	Acute cholinesterase depression may be evidenced by headache, nausea, vomiting, diarrhea, abdominal cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, tightness in chest, weakness, muscle twitching and confusion; in extreme cases, unconsciousness, convulsions, severe respiratory depression and death may occur. Causes eye irritation. May cause drowsiness and dizziness.
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Information on toxicological effects

Acute toxicity	Harmful if inhaled. Harmful if swallowed.
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Product	Species	Test Results
NUVAN DIRECTED SPRAY AEROSOL		
Acute		
Dermal		
<i>Mist</i>		
LD50	Rabbit	> 5050 mg/kg
Inhalation		
<i>Mist</i>		
LC50	Rat	> 2.72 mg/l
Oral		
<i>Mist</i>		
LD50	Rat	550 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Irritating to eyes.
Respiratory or skin sensitization	
ACGIH Sensitization	
DDVP (DICHLORVOS) (CAS 62-73-7)	Dermal sensitization
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	May cause genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

DDVP (DICHLORVOS) (CAS 62-73-7)

2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Very toxic to aquatic life.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number Not available.

UN proper shipping name Consumer Commodity, ORM-D

Transport hazard class(es)

Class ORM-D

Subsidiary risk -

Packing group Not applicable.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Packaging non bulk None

Packaging bulk None

IATA

UN number UN1950

UN proper shipping name Aerosols, non-flammable, Ltd Qty (Dichlorvos)

Transport hazard class(es)

Class Not available.

Subsidiary risk -

Packing group Not applicable.

Environmental hazards No.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

UN number UN1950
UN proper shipping name Aerosols, non-flammable, Ltd Qty (Dichlorvos)
Transport hazard class(es)
Class Not available.
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS Not available.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. This product is registered under EPA/FIFRA Regulations as a RESTRICTED USE PESTICIDE. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

DDVP (DICHLORVOS) (CAS 62-73-7) Listed.

SARA 304 Emergency release notification

DDVP (DICHLORVOS) (CAS 62-73-7) 10 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
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DDVP (DICHLORVOS)	62-73-7	10	1000 lbs		
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SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
DDVP (DICHLORVOS)	62-73-7	0.5

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

DDVP (DICHLORVOS) (CAS 62-73-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

DDVP (DICHLORVOS) (CAS 62-73-7)

US. New Jersey Worker and Community Right-to-Know Act

DDVP (DICHLORVOS) (CAS 62-73-7)

US. Pennsylvania Worker and Community Right-to-Know Law

DDVP (DICHLORVOS) (CAS 62-73-7)

US. Rhode Island RTK

DDVP (DICHLORVOS) (CAS 62-73-7)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

DDVP (DICHLORVOS) (CAS 62-73-7)

Listed: January 1, 1989

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-19-2015

References ACGIH®: American Conference of Governmental Industrial Hygienists
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
EPA: Environmental Protection Agency
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Agency
SARA: Superfund Amendments and Reauthorization Act
TSCA: Toxic Substances Control Act
DOT: Department of Transportation
IMDG: International Maritime Dangerous Goods
IATA: International Air Transport Association

Version # 01

Further information Not available.

HMIS® ratings Health: 2*
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 2
Flammability: 0
Instability: 0

Disclaimer

AMVAC Chemical Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

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