

## 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.

<b>Storage</b>	Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	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**

<b>Inhalation</b>	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.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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.
<b>Most important symptoms/effects, acute and delayed</b>	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.
<b>Indication of immediate medical attention and special treatment needed</b>	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.
<b>General information</b>	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).

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

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	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.
<b>Methods and materials for containment and cleaning up</b>	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.
<b>Environmental precautions</b>	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

<b>Precautions for safe handling</b>	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.
<b>Conditions for safe storage, including any incompatibilities</b>	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/m3

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
DDVP (DICHLORVOS) (CAS 62-73-7)	TWA	0.1 mg/m3	Inhalable fraction and vapor.

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
DDVP (DICHLORVOS) (CAS 62-73-7)	TWA	1 mg/m3

<b>Biological limit values</b>	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

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

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

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	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

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

<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	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

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

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

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