

**DuPont™ Vydate® C-LV Insecticide/Nematicide**

Version 2.0

Revision Date 07/09/2015

Ref. 130000028953

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Vydate® C-LV Insecticide/Nematicide
Tradename/Synonym : DPX-D1410
OXAMYL: [Methyl N'N'-dimethyl-N-[(methylcarbamoyl)oxy]-1-thiooxamimidate]

Product Use : Insecticide, Nematicide

Restrictions on use :
Do not use product for anything outside of the above specified uses

Manufacturer/Supplier : DuPont
4417 Lancaster Pike
Wilmington, DE 19805, USA

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Flammable liquids	Category 3
Acute toxicity (Oral)	Category 2
Acute toxicity (Inhalation)	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity - single exposure	Category 3

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Label content

Pictogram

:



Signal word

: Danger

Hazardous warnings

: Flammable liquid and vapour.
Fatal if swallowed or if inhaled
Causes serious eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.


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Hazardous prevention measures

: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 Wash skin thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves/ eye protection/ face protection.
 Wear respiratory protection.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.
 Rinse skin with water/ shower.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a POISON CENTER/doctor.
 Rinse mouth.
 If eye irritation persists: Get medical advice/ attention.
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 Store in a well-ventilated place. Keep container tightly closed.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No applicable data available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration

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Oxamyl	23135-22-0	42 %
Cyclohexanone	108-94-1	25 - 29 %
Other Ingredients		29 - 33 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : ATROPINE IS AN ANTIDOTE - SEEK MEDICAL ATTENTION AT ONCE IN ALL CASES OF SUSPECTED POISONINGS.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
For medical emergencies involving this product, call toll free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.
- Inhalation : Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Ingestion : If swallowed, call a poison control centre or doctor immediately. If swallowed, drink 1 or 2 glasses of water and try once or twice to induce vomiting by touching the back of throat with finger. Induce vomiting if person is conscious. Do not give anything by mouth to an unconscious person.



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Most important symptoms/effects, acute and delayed : Poisoning produces effects associated with anticholinesterase activity which may include:
Weakness Blurred vision Breathing difficulties Nausea Headache Abdominal pain discomfort in the chest constriction of pupils slow pulse sweating muscle twitching

Protection of first-aiders : No applicable data available.
Notes to physician : This product is an acetyl cholinesterase inhibiting carbamate insecticide. Morphine therapy is contra-indicated. Administer atropine sulphate as an antidote until complete atropinisation (1.2-2.0 mg i.v. every 10-30 minutes). Artificial respiration and/or oxygen may be necessary. Allow no further exposure to any cholinesterase inhibitor until full recovery is assured.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray, Dry chemical, Foam, Carbon dioxide (CO₂)

Unsuitable extinguishing media : High volume water jet, (contamination risk)

Specific hazards : Vapours may form explosive mixtures with air. Heating can release vapours which can be ignited.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Further information : Evacuate personnel and keep upwind of fire. Shut off source of fuel, if possible and without risk. If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Burns with colourless flame.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- Safeguards (Personnel) : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.
- Environmental precautions : Prevent material from entering sewers, waterways, or low areas.
- Spill Cleanup : Soak up with sawdust, sand, oil dry or other absorbent material. Dispose of in an approved container.
If liquid has been spilt in large quantities clean up promptly by scoop or vacuum.
- Accidental Release Measures : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
- Handling (Physical Aspects) : Combustible Keep away from heat and sources of ignition.
- Dust explosion class : No applicable data available.
- Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Keep tightly closed in a dry, cool and well-ventilated place. Not for use or storage in or around the home. Keep out of the reach of children.
Store at temperatures of 45°F or higher.
- Storage period : No applicable data available.
- Storage temperature : > 0 °C (> 32 °F)

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Human Flaggers must be in enclosed cabs. When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. Use only with adequate ventilation. Refer to the product label for additional Engineering Controls.

Personal protective equipment
Respiratory protection : Mixers, loaders, applicators and other handlers must wear: A respirator with an organic vapor-removing cartridge with a prefilter approved for pesticides (NIOSH approval number prefix TC-23C), or a canister approved for pesticides (NIOSH approval number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any R, P, or HE prefilter.

Skin and body protection : Mixers, loaders, applicators and other handlers must wear:
Coveralls worn over long-sleeved shirt and long pants
Chemical-resistant gloves
Barrier laminate
butyl-rubber
Chemical resistant footwear plus socks
Protective eyewear
Chemical resistant headgear for overhead exposure
Chemical resistant apron when mixing, loading, or cleaning equipment or spills.
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
Coveralls
Chemical resistant gloves made of any waterproof material
Shoes plus socks

Protective measures : Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines
Exposure Limit Values


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Oxamyl AEL *	(DUPONT)	0.05 mg/m3	8 & 12 hr. TWA
Cyclohexanone Permissible exposure limit:	(OSHA)	50 ppm	200 mg/m3
TLV	(ACGIH)	20 ppm	TWA
TLV	(ACGIH)	50 ppm	STEL
AEL *	(DUPONT)	50 ppm	15 minute TWA, Skin

Biological Exposure Indices

Cyclohexanone BEI	(ACGIH)	80 mg/l 1,2-Cyclohexanediol, with hydrolysis/Urine Sampling time: End of shift at end of work week.
BEI	(ACGIH)	8 mg/l Cyclohexanol, with hydrolysis/Urine Sampling time: End of shift.

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	: liquid
Form	: liquid
Color	: blue

Odor : unpleasant, solvent-like

Odor threshold : No applicable data available.

pH : 3.0

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : 51.7 °C

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	closed cup
Evaporation rate	: No applicable data available.
Flammability (solid, gas)	: No applicable data available.
Upper explosion limit	: No applicable data available.
Lower explosion limit	: No applicable data available.
Vapor pressure	: 14.1 mm Hg at 20 °C (68 °F)
Vapour density	: No applicable data available.
Specific gravity (Relative density)	: 1.09 at 25 °C (77 °F)
Bulk density	: 9.02 lb/gal
Water solubility	: miscible
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No applicable data available.
Chemical stability	: Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: Polymerization will not occur.
Conditions to avoid	: No applicable data available.
Incompatible materials	: None reasonably foreseeable.


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Hazardous decomposition products : No applicable data available.

SECTION 11. TOXICOLOGICAL INFORMATION

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Inhalation 4 h LC50 : 0.11 mg/l , Rat

Dermal LD50 : > 5,000 mg/kg , Rat

Oral LD50 : 9.1 mg/kg , Rat

Skin irritation : No skin irritation, Rabbit

Eye irritation : Irritating to eyes., Rabbit

Sensitisation : Did not cause sensitisation on laboratory animals., Guinea pig

Oxamyl

Repeated dose toxicity : Oral - feed
multiple species
- 15 d
LOAEL: 0.75 mg/kg
Reduced body weight gain, cholinesterase inhibition

Carcinogenicity : Did not show carcinogenic effects in animal experiments.
Not classifiable as a human carcinogen.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Cyclohexanone

Repeated dose toxicity : Ingestion
Rat
- 90 d


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NOAEL: 143 mg/kg
 LOAEL: 407 mg/kg Method: OECD Test Guideline 408
 No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., Adverse body weight effects

- Carcinogenicity : Not classifiable as a human carcinogen.
 Animal testing did not show any carcinogenic effects.
- Mutagenicity : Animal testing did not show any mutagenic effects.
 Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction
 Evidence suggests the substance is not a reproductive toxin in animals.
 No effects on or via lactation
- Teratogenicity : Animal testing showed no developmental toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION
Aquatic Toxicity
Oxamyl

- 96 h LC50 : Oncorhynchus mykiss (rainbow trout) 3.16 mg/l
- 72 h ErC50 : Pseudokirchneriella subcapitata (green algae) 2.61 mg/l
- 48 h EC50 : Daphnia magna (Water flea) 0.319 mg/l
- 61 d Early Life-Stage : NOEC Oncorhynchus mykiss (rainbow trout) 0.77 mg/l


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21 d flow-through test	:	NOEC Daphnia magna (Water flea) 0.0268 mg/l
Cyclohexanone		
96 h LC50	:	Pimephales promelas (fathead minnow) 527 mg/l
72 h EC50	:	Desmodesmus subspicatus (green algae) > 100 mg/l Information given is based on data obtained from similar substances.
72 h NOEC	:	Desmodesmus subspicatus (green algae) > 100 mg/l Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) 800 mg/l
Additional ecological information	:	Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate. See product label for additional application instructions relating to environmental precautions.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Do not contaminate water, food or feed by disposal. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Waste disposal methods - Container	:	Container Refilling and Disposal: Refer to the product label for instructions. Do not transport if this container is damaged or leaking. In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.
Contaminated packaging	:	No applicable data available.

SECTION 14. TRANSPORT INFORMATION


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DOT	UN number	: 2991
	Proper shipping name	: Carbamate pesticides, liquid, toxic, flammable (Oxamyl, Cyclohexanone)
	Class	: 6.1 (3)
	Packing group	: II
	Labelling No.	: 6.1 (3)
	Reportable Quantity	: 100 lbs Oxamyl
IATA_C	UN number	: 2991
	Proper shipping name	: Carbamate pesticide, liquid, toxic, flammable (Oxamyl, Cyclohexanone)
	Class	: 6.1 (3)
	Packing group	: II
	Labelling No.	: 6.1 (3)
IMDG	UN number	: 2991
	Proper shipping name	: CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Oxamyl, Cyclohexanone)
	Class	: 6.1 (3)
	Packing group	: II
	Labelling No.	: 6.1 (3)
	Marine pollutant	: yes (Oxamyl)

SECTION 15. REGULATORY INFORMATION

Other regulations : This Safety Data Sheet is for a pesticide product registered by the US Environmental Protection Agency (USEPA) and is therefore also subject to certain labeling requirements under US pesticide law (FIFRA). These requirements differ from the classification criteria and hazard information required by OSHA for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the mandatory hazard information required by USEPA on the pesticide label:

DANGER! POISON!

Corrosive Fatal if swallowed. Causes irreversible eye damage. May be fatal if inhaled. Do not breathe vapour. Do not get in eyes or on clothing. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before re-use. Toxic to aquatic organisms. This product is extremely toxic to: Birds Mammals


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SARA 313 Regulated Chemical(s)	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	:	Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Cyclohexanone, Oxamyl
Title III hazard classification	:	Acute Health Hazard: Yes Chronic Health Hazard: No Fire: Yes Reactivity/Physical hazard: No Pressure: No
CERCLA Reportable Quantity	:	236 lbs Based on the percentage composition of this chemical in the product.: Oxamyl
SARA Reportable Quantity	:	236 lbs Based on the percentage composition of this chemical in the product.: Oxamyl
EPA Reg. No.	:	352-532 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.
California Prop. 65	:	Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

		NFPA
Health	:	2
Flammability	:	2
Reactivity/Physical hazard	:	0



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Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

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