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DuPont
Material Safety Data Sheet

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M0000388 "DuPont" "LANNATE" SP INSECTICIDE
Revised 19-OCT-2007

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"LANNATE" is a registered trademark of DuPont.

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Corporate MSDS Number : DU008251
Grade : A 90% FORMULATION

Tradenames and Synonyms

Lannate SP
DPX-X1179
Lannate 90-WD
90-WD
Yugo

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

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

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
METHOMYL (S-Methyl-N-[(methylcarbamoyl)oxy] thioacetimidate)	16752-77-5	90
INERT INGREDIENTS		10

HAZARDS IDENTIFICATION

Emergency Overview

DANGER! POISON! FATAL IF SWALLOWED. MAY BE FATAL IF INHALED OR GETS IN EYES. DO NOT BREATHE DUST OR SPRAY MIST.

Do not get in eyes or on clothing. Wear protective eyewear and respirator. Harmful if absorbed through skin. Avoid contact with skin. Wash hands thoroughly with soap and water after handling.

Potential Health Effects

Based on animal and human data, overexposure may produce reversible cholinesterase inhibition.

Eye contact with Lannate SP may cause eye irritation with discomfort, tearing, or blurring of vision. Eye contact may result in systemic toxicity or fatality.

Skin, eye, inhalation or ingestion exposure to Methomyl may cause acute cholinesterase depression (characterized by nonspecific discomfort, such as nausea, headache, weakness, cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, muscle twitching, and confusion) and hematologic effects. Higher exposures may lead to loss of consciousness; or convulsions and severe respiratory depression.

Carcinogenicity Information

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

FIRST AID MEASURES

First Aid

This product is an N-Methyl Carbamate Insecticide.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

IF IN EYES: 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.

(FIRST AID MEASURES - Continued)

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

ATROPINE IS AN ANTIDOTE - SEEK MEDICAL ATTENTION AT ONCE IN ALL CASES OF SUSPECTED POISONING.

If poisoning symptoms appear (see POISONING SYMPTOMS), get medical attention.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also call 1-800-441-3637 for emergency medical treatment information.

Notes to Physicians

Probable mucosal damage may contraindicate the use of gastric lavage.

POISONING SYMPTOMS-Methomyl poisoning produces effects associated with anticholinesterase activity which may include weakness, blurred vision, headache, nausea, abdominal cramps, discomfort in the chest, constriction of pupils, sweating, slow pulse, muscle tremors. If poisoning symptoms appear, refer to First Aid section on the product label and seek medical attention at once.

TREATMENT - Atropine sulfate should be used for treatment. Administer repeated doses, 1.2 to 2.0 mg intravenously every 10 to 30 minutes until full atropinization is achieved. Maintain atropinization until the patient recovers. Artificial respiration or oxygen may be necessary. Allow no further exposure to any cholinesterase inhibitor until recovery is assured.

Do not use 2-PAM for exposure to this product alone. However, for exposure to combinations of this product and organophosphorous insecticides, 2-PAM may be used as required to supplement the atropine sulfate treatment. Do not use morphine.

For medical emergencies involving this product, call toll free 1-800-441-3637.

FIRE FIGHTING MEASURES

Flammable Properties

Flammable limits in Air, % by Volume
LEL : 0.096 g/L
Autodecomposition : 136 C (277 F)

Will ignite if exposed to intense heat or open flame.

Dust forms explosive mixture with air.

Fire and Explosion Hazards:

Fire or intense heat may cause violent rupture of packages. Heating can release vapors which can be ignited. Hazardous gases produced in fire under conditions that produce incomplete combustion may consist of SO₂, NO₂, CO₂, HCN, CH₃NCO, CO, CS₂. Complete combustion greatly reduces the amounts of CS₂, CO, HCN, and CH₃NCO generated.

Extinguishing Media

Water Spray, Water Fog, Dry Chemical, CO₂.

Fire Fighting Instructions

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Use water spray. Cool tank/container with water spray. Isolate area. Fight fire from maximum distance, use extreme caution as heat may decompose material and rupture containers.

If area is exposed to fire and conditions permit, let fire burn itself out. Burning chemicals may produce by-products more toxic than the original material. If product is on fire, wear self-contained breathing apparatus and full protective equipment. Use water spray. Control runoff.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

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

Emergency Response - Chemical resistant coveralls, waterproof gloves, waterproof boots and face/eye protection. If dusting occurs, use NIOSH approved respirator protection.

(ACCIDENTAL RELEASE MEASURES - Continued)

Initial Containment

Remove source of heat, sparks, flame, impact, friction or electricity.

Follow applicable Federal, State/Provincial and Local laws/regulations.

Prevent material from entering sewers, waterways, or low areas.

Accidental Release Measures

Contain spill. Shovel or sweep up powder. Use sawdust, sand, oil dry or other absorbent material as an aid to removing remaining traces of spilled material. Do not allow the material to enter sewers, waterways or low areas.

If product enters crevices and can not be removed, treat with a sodium hydroxide solution and allow to stand 4 hours.

NOTE: Sodium hydroxide is caustic and causes burns. Do not get in eyes, on skin, or on clothing. In case of contact, flush eyes or skin with plenty of water and call a physician. When handling, wear goggles in addition to boots and gloves.

HANDLING AND STORAGE

Handling (Personnel)

Do not breathe dust or spray mist. Do not get in eyes, on skin, or on clothing.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then 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)

Avoid dust generation. Keep away from heat, sparks and flames.

Do not open, rip, tear, cut or perforate the inner water soluble bag.

Keep container closed. Use with adequate ventilation.

(HANDLING AND STORAGE - Continued)

Storage

Handle this package carefully to prevent breakage of inner bag when stored at low temperatures. Allow to warm above 50°F for normal handling. Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Not for use or storage in or around the home.

KEEP OUT OF REACH OF CHILDREN.

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 part 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

The enclosed cabs must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR part 170.240 (d)(4-6)]. The handler PPE requirements may be reduced or modified as specified in the WPS.

Water soluble packets when used correctly qualify as a closed loading system under the WPS. Handlers handling this product while it is enclosed in intact water-soluble packets are permitted to wear long-sleeved shirt, long pants, shoes plus socks, chemical-resistant gloves, and chemical-resistant apron, provided the other required PPE is immediately available in case the bag is opened.

Pilots must not assist in the mixing and loading operations.

Personal Protective Equipment

Applicators and others exposed to the diluted spray solution must wear:

- Long-sleeved shirt and long pants.
- Chemical resistant gloves such as barrier laminate or butyl rubber.
- Shoes plus socks.
- Protective eyewear.

Mixers, loaders, cleaners, repairers of application equipment, and others exposed to the concentrate must wear:

- Long sleeve shirt and long pants.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Chemical-resistant gloves, such as barrier laminate or butyl rubber.
Socks and chemical resistant footwear.
Protective eyewear.
Respirator as outlined below.
Chemical resistant apron.

For exposures in enclosed areas, a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G), or NIOSH approved respirator with an organic vapor (OV) cartridge or a canister with any R, P, or HE prefilter.

For exposures outdoors, dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any R, P, or HE prefilter.

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

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 Category A (such as butyl rubber, natural rubber, neoprene rubber or nitrile rubber), all equal to or greater than 14 mils.
Shoes plus socks.
Protective eyewear.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Exposure Guidelines

Applicable Exposure Limits

METHOMYL

PEL (OSHA)	: None Established
TLV (ACGIH)	: 2.5 mg/m ³ , 8 Hr. TWA, A4
AEL * (DuPont)	: None Established

* 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.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water : 5.8 WT% @ 25 C (77 F)
Odor : Slightly sulfurous
Form : Solid
Color : White
Specific Gravity : 1.2946 @ 25C (77F)
Bulk Density (Loose) : 30-38 lb/cu ft
Bulk Density (Packed) : 37-43 lb/cu ft

Bulk Density (Loose): 480.6-608.7 kg/m3
Bulk Density (Packed): 592.7-688.8 kg/m3

Physical Hazards

Keep container closed. Use with adequate ventilation.

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Incompatible with strong bases.

Polymerization

Polymerization will not occur.

Other Hazards

Decomposition : Thermal decomposition and combustion will produce hazardous gases. These may include sulfur oxides, methyl isocyanate and hydrogen cyanide.

TOXICOLOGICAL INFORMATION

Animal Data

Lannate SP

Lannate SP is not a skin irritant or a skin sensitizer, but is a slight eye irritant in animals.

Effects of a single eye exposure included mortality, pupillary constriction of the treated eye, tremors, convulsions, salivation, lethargy, rales, and fasciculations. These clinical signs were present only on the day of treatment.

(TOXICOLOGICAL INFORMATION - Continued)

Methomyl

Inhalation 4 hour LC50: 0.258 mg/L in rats
Skin absorption LD50: > 2,000 mg/kg in rabbits
Oral LD50: 34 mg/kg in male rats
Oral LD50: 30 mg/kg in female rats

Methomyl is not a skin irritant or a skin sensitizer, but is a mild eye irritant in animals.

Effects of a single inhalation exposure to Methomyl include weight loss, diarrhea, lethargy, as well as temporary decreased plasma cholinesterase activity, abnormal gait, hyperactivity and tremors. Corneal opacity was noted in one rat exposed to near-lethal concentrations.

Effects of a single dermal exposure to Methomyl include rapid respiration, miosis and nervous system effects such as tremors. Repeated exposure produced labored breathing, and nervous system effects such as miosis and depression.

A single ingestion exposure to Methomyl produced nervous system effects as described for inhalation and skin exposures. Repeated oral exposure produced signs of nervous system effects similar to acute studies. Feeding studies in rats and mice produced only mild effects having no clear toxicological significance. Long-term feeding studies via the diet produced lowered red blood counts and hematocrit, indications of nervous system effects, and histopathological changes in kidneys, spleen, liver and bone marrow.

In a 91-day oral neurotoxicity study in rats, most of the effects observed appeared to be acute in nature. There were no morphological changes in the nervous system.

Ocular exposure with Methomyl caused pupillary constriction, incoordination, tremors, convulsions, profuse salivation, lethargy, rales, and/or fasciculations were also observed in rabbits approximately 1 and 20 minutes after treatment with 10 mg of methomyl. Pupillary constriction was still evident after 1 hour. These clinical signs are typical of anticholinesterase activity. These effects were not present the day after treatment.

Tests in animals demonstrate no carcinogenic, developmental, or reproductive toxicity.

Methomyl does not produce genetic damage in animals or in bacterial and mammalian cell cultures.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

METHOMYL

96 hour LC50 - Bluegill sunfish: 0.72 mg/L.

MATC, fathead minnows : 104 ug/L

48 hour LC50 - Daphnia magna: 0.0076 - 0.0317 ppm.

AVIAN TOXICITY:

Acute Oral LD50 - Bobwhite Quail: 24.2 mg/kg.

Acute Oral LD50 - Mallard Duck: 15.9 mg/kg.

Acute Dietary LC50 - Bobwhite Quail: 1100 ppm.

Acute Dietary LC50 - Mallard Duck: 2883 ppm

Acute Oral LD50 - Pheasant: 15.4 mg/kg

Acute Dietary LC50 - Pheasant: 1975 ppm

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

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 user 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.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, and mammals. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

Refer to the product label for additional application

(DISPOSAL CONSIDERATIONS - Continued)

instructions relating to Environmental Precautions.

Container Disposal

For Fiber Drums with Liners: Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into manufacturing equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner.

For Water Soluble Packets: Do not reuse the outer box or the resealable plastic bag. When all water-soluble packets are used, the outer packaging should be clean and may be disposed of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by open burning. If burned, stay out of smoke. If the resealable plastic bag contacts the formulated product in any way, the bag must be triple-rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above.

For Paper and Plastic Bags: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO
Proper Shipping Name : CARBAMATE PESTICIDE, SOLID, TOXIC
(methomyl)
Hazard Class: : 6.1
UN No. : UN 2757
Packing Group : II
Special Information : Marine Pollutant (water or bulk)
Reportable Quantity : Methomyl (if 100 or more lbs. in a
single package)

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : No
Fire : No
Reactivity : No

(REGULATORY INFORMATION - Continued)

Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-342

ADDITIONAL REGULATORY INFORMATION

Section 302 Extremely Hazardous Substance:
Methomyl - Threshold Planning Quantity (TPQ)
(500/10,000 lbs.)

SARA/CERCLA Reportable Quantity:
Methomyl - (100 lbs.)

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 2
Flammability : 1
Reactivity : 1

NPCA-HMIS Rating
Health : 3
Flammability : 1
Reactivity : 1

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS: DuPont Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS