



Material Safety Data Sheet

DYLOX® 420 SL TURF AND ORNAMENTAL INSECTICIDE

MSDS Number: 102000015239

MSDS Version 2.0

Revision Date: 10/21/2008

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name DYLOX® 420 SL TURF AND ORNAMENTAL INSECTICIDE
MSDS Number 102000015239
EPA Registration No. 432-1464

Bayer Environmental Science
 2 T.W. Alexander Drive
 Research Triangle PK, NC 27709
 USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Trichlorfon	52-68-6	37.30
2-(2-Methoxyethoxy)ethanol	111-77-3	

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Harmful if swallowed or absorbed through skin. Moderate eye irritation. Do not take internally. Do not get in eyes, on skin, or on clothing.

Physical State liquid, clear

Appearance colourless

Routes of Exposure Eye contact, Skin contact, Ingestion, Inhalation

Immediate Effects

Eye Moderate eye irritation. Do not get in eyes.

Skin May cause slight irritation. Harmful if absorbed through skin. Do not get on skin or clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation Avoid inhalation of vapour or mist.

Chronic or Delayed Long-Term

This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.



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Medical Conditions Aggravated by Exposure	Any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient. Allow no further exposure to any cholinesterase inhibitor until full recovery is assured.
Potential Environmental Effect	Toxic to fish and wildlife. Extremely toxic to aquatic and estuarine invertebrates.

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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 physician or poison control center immediately.
Skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
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 physician or poison control center immediately.

Notes to Physician Signs and Symptoms	The symptoms of cholinesterase inhibition include: Nausea Salivation Blurred vision constriction of pupils lacrimation Vomiting Diarrhoea Abdominal pain Dizziness sweating
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Hazards Cholinesterase inhibitor.

Treatment The following antidotes are generally accepted: atropin and oximes.



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SECTION 5. FIRE FIGHTING MEASURES

Flash point	84.4 °C / 183.9 °F
Suitable Extinguishing Media	Carbon dioxide (CO2), Dry chemical, Foam, Water spray
Fire Fighting Instructions	<p>Keep out of smoke. Fight fire from upwind position. Cool closed containers/ tanks exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Whenever possible, contain fire-fighting water by diking area with sand or earth.</p> <p>In the event of fire and/or explosion do not breathe fumes. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p>

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate hazard area. Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces.
Methods for Cleaning Up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional Advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	<p>Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.</p> <p>Keep away from heat and sources of ignition.</p>
Storing Procedures	Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.
Work/Hygienic Procedures	<p>Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.</p> <p>Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove</p>



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soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Min/Max Storage Temperatures Recommended maximum transport/storage temperature: 38 °C / 100 °F
The 30-day storage temperature average must not exceed the recommended maximum.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Eye/Face Protection Tightly fitting safety goggles

Hand Protection Chemical resistant nitrile rubber gloves

Body Protection Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory Protection When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Trichlorfon	52-68-6	ACGIH	TWA	1 mg/m3
		TX ESL	ST ESL	50 ug/m3
		TX ESL	AN ESL	5 ug/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance colourless

Physical State liquid, clear

pH approx. 2.3 (10 %) at 20 °C

Density approx. 1.18 g/cm³ at 20 °C

Melting / Freezing Point -4 °C / 25 °F

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid Heat, flames and sparks.
Elevated temperatures



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Incompatibility	Strong oxidizing agents Bases
Hazardous Decomposition Products	Thermal decomposition can lead to release of: Carbon monoxide toxic gases/vapours
Hazardous Reactions	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, trichlorfon.

Acute Oral Toxicity	female rat: LD50: 1,098 mg/kg
Acute Dermal Toxicity	rat: LD50: > 2,000 mg/kg
Acute Inhalation Toxicity	rat: LC50: > 2.1 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. highest concentration tested No deaths
	rat: LC50: > 8.4 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
Skin Irritation	rabbit: Slight irritation.
Eye Irritation	rabbit: Moderate eye irritation.
Sensitization	guinea pig: Non-sensitizing.
Chronic Toxicity	Trichlorfon caused cholinesterase inhibition, anemia, hypercholesterolemia and/or organ effects (liver, kidney, lung, stomach, intestinal) in chronic studies in rats and monkeys.

Assessment Carcinogenicity

Trichlorfon was not carcinogenic in a lifetime feeding study in rats. In mice, trichlorfon caused an increased incidence of epithelial mammary tumors in females at the excessive high dose. Based on these findings, EPA has classified trichlorfon as "not likely to be carcinogenic to humans at low doses, but is likely to be carcinogenic at high doses."

ACGIH
None.
NTP
None.



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IARC
None.
OSHA
None.

Reproductive & Developmental Toxicity	DEVELOPMENTAL TOXICITY: Trichlorfon is not considered a primary developmental toxicant in rats and rabbits. Developmental effects were observed at doses that caused maternal toxicity.
Neurotoxicity	Trichlorfon caused neurobehavioral effects ascribed to cholinergic toxicity in acute and subchronic studies in rats. In addition, minimal micropathologic findings were observed in the neural tissues of high-dosed rats following subchronic exposure. In a one-generation developmental neurotoxicity study, neurobehavioral effects were observed in the offspring without any correlating micropathologic findings.
Mutagenicity	Trichlorfon has produced some positive results in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions	Apply this product as specified on the label. 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 surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	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.
Container Disposal	Do not re-use empty containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.



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SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not Regulated for domestic surface transport:

NOTE : Product has an RQ of Trichlorfon if packaged in single packages holding 268 pounds of Dylox. Product is also regulated as a Marine Pollutant when transported domestically in bulk packages or when transported by vessel.

FREIGHT DESCRIPTION:
Insecticides or Fungicides, N.O.I., Other Than Poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1464

US Federal Regulations

TSCA list

2-(2-Methoxyethoxy)ethanol 111-77-3

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Trichlorfon	52-68-6	1.0%
2-(2-Methoxyethoxy)ethanol	111-77-3	1.0%

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Trichlorfon	52-68-6	CA, CT, IL, NJ, PA
2-(2-Methoxyethoxy)ethanol	111-77-3	NJ, PA

Canadian Regulations

Canadian Domestic Substance List

Trichlorfon	52-68-6
2-(2-Methoxyethoxy)ethanol	111-77-3

Environmental

CERCLA

Trichlorfon	52-68-6	100 lbs
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Clean Water Section 307 Priority Pollutants



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None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 2 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated Section 2: Composition/Information on Ingredients.

Revision Date: 10/21/2008

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