



MSDS Number: R000009911

DYLOX 6.2 GR

MSDS Version 2.0

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name DYLOX 6.2 GR
Chemical Name
Common Name
MSDS Number R000009911
Chemical Family Organophosphorus Insecticide
Chemical Formulation
EPA Registration No. 432-1308

Bayer Environmental Science
 95 Chestnut Ridge Road
 Montvale, NJ 07645
 USA

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

Product Use Description Insecticide for control of White Grubs, Mole Crickets, Sod Webworms and Cutworms.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
		<u>Minimum</u>	<u>Maximum</u>
Trichlorfon technical	52-68-6	5.6000	6.8000

Material Safety Data Sheet

DYLOX 6.2 GR

MSDS Number: R000009911
MSDS Version 2.0

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview

Caution! Harmful if swallowed. Causes moderate eye irritation. Do not take internally. Do not breathe dust. Avoid contact with skin, eyes and clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Physical State

Granules

Odor

Sweet

Appearance

Tan

Routes of Exposure

Inhalation, Skin contact, Skin Absorption, Eye contact

Immediate Effects

Eye

Do not get in eyes. Causes moderate eye irritation.

Skin

Avoid contact with skin or clothing.

Ingestion

Do not take internally. Harmful if swallowed.

Inhalation

Do not breathe dust.

Chronic or Delayed Long-Term

This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

Medical Conditions Aggravated by Exposure

No specific medical conditions are known which may be aggravated by exposure to this product. Any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient.

SECTION 4. FIRST AID MEASURES

General

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation, dermal absorption or ingestion of this material may result in systemic intoxication due to inhibition of the enzyme cholinesterase. Symptoms of poisoning may only appear several hours later. This product causes reversible cholinesterase inhibition. Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced signs and symptoms.

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 poison control center or doctor for treatment advice.

Material Safety Data Sheet

MSDS Number: R000009911
MSDS Version 2.0

DYLOX 6.2 GR

Skin	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.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Inhalation	Move person 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 further treatment advice.

Notes to physician

Signs and Symptoms

The symptoms of cholinesterase inhibition include:

- nausea
- salivation
- lachrymation
- blurred vision
- constriction of pupils

Hazards

This product is a cholinesterase inhibitor. Allow no further exposure to any cholinesterase inhibitor until full recovery is assured.

Treatment

ANTIDOTE: Administer atropine sulfate in large therapeutic doses. Repeat as necessary to the point of tolerance. 2-PAM is also antidotal and may be administered in conjunction with atropine.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	Not applicable
Suitable Extinguishing Media	Water
Fire Fighting Instructions	Keep out of smoke. Cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain runoff to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

Material Safety Data Sheet

DYLOX 6.2 GR

MSDS Number: R000009911
MSDS Version 2.0

SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal	Keep unnecessary people away, isolate hazard area and deny entry. Do not walk through spilled material. Avoid contact with spilled product or contaminated surfaces.
Land Spill or Leaks	Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with detergent and bleach solution. Repeat. Rinse with water. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers or other waterways or contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	Handle and open container in a manner as to prevent spillage. Do not get in eyes, on skin, or on clothing.
Storing Procedures	Do not contaminate water, food, or feed by storage or disposal. 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	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.
Min/Max Storage Temperatures	The 30 day temperature average is not to exceed 100°F.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Control exposure levels through the use of general and local exhaust ventilation.
Eye/Face Protection	Goggles or Safety glasses
Hand Protection	Chemical resistant gloves
Body Protection	Long-sleeved shirt and long pants. Shoes plus socks.
General Protection	Clean water and soap should be available for washing in case of eye or skin contamination.

Material Safety Data Sheet

DYLOX 6.2 GR

MSDS Number: R000009911
MSDS Version 2.0

Educate and train employees in safe use of the product. Follow all label instructions.

Exposure Limits

Trichlorfon technical	52-68-6	ACGIH NIC	TWA	1 mg/m3
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Tan
Physical State	Granules
Odor	Sweet
pH	4.6 (1% in distilled water)
Bulk Density	30 - 35 lbs/cu-ft

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	This is a stable material.
Conditions to Avoid	Sustained temperatures above 100°F. Moisture
Incompatibility	Strong oxidizing agents Bases Alkaline
Hazardous Products of Decomposition	Carbon monoxide Phosphorus pentoxide (P2O5) Chloral Dimethyl hydrogen phosphite
Hazardous Polymerization (Conditions to avoid)	Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Material Safety Data Sheet

MSDS Number: R000009911
MSDS Version 2.0

DYLOX 6.2 GR

Acute Oral Toxicity	Male Rat: LD50: > 5,100 mg/kg Female Rat: LD50: > 5,000 mg/kg
Acute Dermal Toxicity	Male and Female Rat: LD50: > 5,000 mg/kg
Acute Inhalation Toxicity	Male and Female Rat: LC50: 4-hr exposure to dust: > 2 mg/l (extrapolated based on EPA's assessment of the inhalation hazard of DYLOX 5% Granular Bait) Male and Female Rat: LC50: > 2 mg/l 1 h Exposure to Dust
Skin Irritation	Rabbit: Not a dermal irritant.
Eye Irritation	Rabbit: Mild eye irritation
Sensitization	Guinea pig: Not a skin sensitizer.
Sub-Chronic Toxicity	In a 3-week inhalation study, rats were exposed to trichlorfon at aerosol concentrations of 12.7, 35.4 or 103.5 mg/m ³ for 6 hours/day, 5 days/week. Cholinesterase inhibition occurred in animals at concentrations of 35.4 mg/m ³ and greater. The no-observed-effect-level (NOEL) was 12.7 mg/m ³ . In a 3 week dermal toxicity study, rabbits were treated with trichlorfon at levels of 100, 300 or 1000 mg/kg for 6 hours/day, 5 days/week. The only effect observed was erythrocyte cholinesterase inhibition. Under the conditions of this study, the NOEL was 100 mg/kg.
Chronic Toxicity	Trichlorfon was administered by oral gavage to Rhesus monkeys at doses of 0.2, 1.0 or 5.0 mg/kg, 6 days/week for 10 years. Effects observed included reduced body weight gain, cholinesterase inhibition and anemia (reductions in hematocrit, hemoglobin and erythrocyte counts). The NOEL for cholinesterase inhibition was 0.2 mg/kg. Excluding cholinesterase inhibition, the overall NOEL was 1.0 mg/kg. In chronic feeding using rats, trichlorfon was administered for 2 years at dietary concentrations ranging from 100 to 2500 ppm. Effects observed at the high dose of these studies included decreased body weight gain and feed consumptions, cholinesterase inhibition, anemia, hypercholesterolemia, nonglandular gastritis, duodenal hyperplasia, increased liver and kidney weights, and histopathological changes in the lung and kidney. The dose of 2500 ppm was a dose considered to exceed the maximum tolerated dose (MTD). The overall NOEL from these studies was 100 ppm.

Assessment Carcinogenicity

Trichlorfon was investigated for carcinogenicity in chronic feeding studies using rats and mice at maximum levels of 2500 and 2700 ppm, respectively. There was no evidence of carcinogenic potential observed in either species.

ACGIH
None
NTP
None

Material Safety Data Sheet

MSDS Number: R000009911
MSDS Version 2.0

DYLOX 6.2 GR

IARC

Trichlorfon technical

52-68-6

3

OSHA

None

Reproductive & Developmental Toxicity

REPRODUCTION: In a reproduction study on rats, trichlorfon was administered at dietary concentrations of 150, 500 or 1750 ppm. At the maternally toxic concentration of 1750 ppm, reproductive effects observed in the offspring included decreased body weight gain and dilated renal pelvises. Effects observed in parental animals included reduced body weights, cholinesterase inhibition, kidney effects, and increased organ weights for liver, lung and kidney. The NOELs for parental and reproductive effects were 150 and 500 ppm, respectively.

DEVELOPMENTAL TOXICITY: In a developmental toxicity study using rats, trichlorfon was administered at dietary concentrations of 500, 1125 or 2500 ppm. Maternal toxicity was observed at all levels tested. At 2500 ppm, there was an increased incidence of developmental toxicity as indicated by delayed ossification involving elements of the skull, ribs, vertebrae and pelvis, and by an increased incidence of wavy, curved and/or bulbous ribs. The NOELs for maternal and developmental toxicity were less than 500 and 1125 ppm, respectively. When rats were administered trichlorfon by oral gavage at doses of 10, 30 or 100 mg/kg, there was no indication of maternal or developmental toxicity. In a developmental toxicity study using rabbits, trichlorfon was administered by oral gavage at doses of 10, 35 or 110 mg/kg. There was an increased incidence of resorptions, lagging ossifications and decreased fetal weights at the maternally toxic level of 110 mg/kg. The NOELs for maternal and developmental toxicity were 10 and 35 mg/kg, respectively.

Neurotoxicity

In an acute oral study, hens revealed no evidence of neurotoxicity when treated with the active ingredient at dose levels up to and including 185 mg/kg (highest dose tested). In a 3 month study in which hens received the active ingredient daily at oral doses of 3, 9 or 18 mg/kg, there was no evidence of delayed neurotoxicity. In an acute neurotoxicity screening study using rats, technical grade trichlorfon was administered as a single oral dose at doses of 10, 50, or 200 mg/kg. Compound-related deaths occurred at the high-dose for both sexes. All but one of the high-dose females died on the day of treatment. All clinical signs and neurobehavioral effects observed were ascribed to acute cholinergic toxicity, occurring at dose levels that produced substantial inhibition of cholinesterase activity. There were no compound-related microscopic lesions in skeletal muscle or neural tissues of high-dose males or mid-dose females and the one surviving high-dose female. Excluding cholinergic responses, the NOEL for neurotoxicity was 200 mg/kg for males and 50 mg/kg for females. In a 13 week neurotoxicity study, technical grade trichlorfon was administered to rats at dietary concentrations of 100, 500 and 2500 ppm. Effects observed at the high-dose included decreased body weights, decreased feed consumptions, perianal stains, urine stains, slightly uncoordinated righting response, reduced levels of activity, and cholinesterase inhibition (erythrocyte, plasma and brain). Microscopic examinations revealed minimal degeneration of myelin in the dorsal and ventral root fibers in cervical and lumbar regions of the spinal cord without

Material Safety Data Sheet

MSDS Number: R000009911
MSDS Version 2.0

DYLOX 6.2 GR

degeneration of the axon. All clinical signs and neurobehavioral effects are ascribed to cholinergic neurotoxicity, occurring at exposure levels that produced substantial inhibition of cholinesterase activity. The minimal micropathologic findings at the high dose are not ascribed to the inhibition of cholinesterase activity. The NOEL for neurotoxicity was 500 ppm based on cholinergic effects and neuropathology. The overall NOEL was 100 ppm based on cholinesterase inhibition.

Mutagenicity Numerous mutagenicity studies have been conducted on trichlorfon, some of which are positive.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions Toxic to fish, birds, and other wildlife. 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 washwater. Do not apply where runoff is likely to occur. Apply this product only as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal Completely empty bag into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

RCRA Classification Not Regulated under this Statute

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I.; other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1308

Material Safety Data Sheet

DYLOX 6.2 GR

MSDS Number: R000009911

MSDS Version 2.0

US Federal Regulations

TSCA list

None

TSCA 12b export notification

None

SARA Title III - section 302 - notification and information

None

SARA Title III - section 313 - toxic chemical release reporting

Trichlorfon technical 52-68-6 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 technical 52-68-6 CA, CT, IL, NJ, PA

Canadian Regulations

Canadian Domestic Substance List

None

Environmental

CERCLA

Trichlorfon technical 52-68-6 100 lbs

Clean Water Section 307 Priority Pollutants

None

Safe Drinking Water Act Maximum Contaminant Levels

None

International Regulations

EU Classification

None

European Inventory of Existing Commercial Substances (EINECS)

Trichlorfon technical 52-68-6

Material Safety Data Sheet

DYLOX 6.2 GR

MSDS Number: R000009911
MSDS Version 2.0

SECTION 16. OTHER INFORMATION

	Health	Flammability	Reactivity	Others
NFPA	2	1	1	

MSDS REVISION INDICATOR: New Format; Update sections as needed.

Approval Date: 03/05/2004

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