

**Material Safety Data Sheet****42-S THIRAM FUNGICIDE**

MSDS Number: 102000012786

MSDS Version 2.1

Revision Date: 06/18/2007

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name 42-S THIRAM FUNGICIDE
MSDS Number 102000012786
EPA Registration No. 264-929

Bayer CropScience
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: 1-866-99BAYER (1-866-992-2937)

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Thiram	137-26-8	42.00
1,2-Propanediol	57-55-6	

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! Causes eye irritation. Causes skin irritation. Harmful if swallowed, inhaled or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Avoid breathing spray mist.

Physical State liquid

Appearance light cream

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

Immediate Effects

Eye Causes eye irritation. Do not get in eyes.

Skin Causes skin irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Harmful if absorbed through skin. Do not get in eyes, on skin, or on clothing.

Ingestion Use of alcoholic beverages may enhance toxic effects. Harmful if swallowed. Do not take internally.

Inhalation May cause irritation of the mucous membranes. May cause respiratory tract irritation. Avoid breathing spray mist.

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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.
Medical Conditions Aggravated by Exposure	Individuals with allergic history or pre-existing dermatitis should use extra care in handling this product.
Potential Environmental Effect	Toxic to fish.

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	Ingestion may provoke the following symptoms: Nausea Vomiting breathing difficulties More severe effects if alcohol is consumed.
Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 93.4 °C / > 200.1 °F
Fire and Explosion Hazards	Dangerous gases are evolved in the event of a fire.



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Suitable Extinguishing Media	Foam, Carbon dioxide (CO ₂), Dry chemical, 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.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p>

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Keep unauthorized people away. Isolate hazard area. 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.

SECTION 7. HANDLING AND STORAGE

Handling Procedures	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.
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 soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.</p>
Min/Max Storage Temperatures	<p>Do not transport or store below 0 °C / 32 °F</p> <p>Do not transport or store above 49 °C / 120 °F</p>

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Thiram	137-26-8	ACGIH	TWA	1 mg/m3
		NIOSH	REL	5 mg/m3
		OSHA Z1	PEL	5 mg/m3
		OSHA Z1A	TWA	5 mg/m3
		US CA OEL	TWA PEL	5 mg/m3
		ACGIH NIC	TWA	0.05 mg/m3
1,2-Propanediol	57-55-6	Form of exposure		Inhalable fraction and vapor
		WEEL	TWA	10 mg/m3
		Form of exposure		Aerosol.
Urea	57-13-6	WEEL	TWA	10 mg/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	light cream
Physical State	liquid
pH	6.5 - 7.5 (undiluted)
Density	approx. 1.14 g/cm ³ at 20 °C
Bulk Density	9-10 lb./gal.
Melting / Freezing Point	-9.4 - -6.7 °C / 15.1 - 19.9 °F
Water solubility	miscible
Viscosity	600 - 1,000 mPa.s

SECTION 10. STABILITY AND REACTIVITY

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Conditions to Avoid	Heat, flames and sparks. Freezing
Incompatibility	Copper Oxidizing agents Strong acids
Hazardous Decomposition Products	Thermal decomposition can lead to release of: Sulphur oxides carbon disulphide hydrogen sulfide nitrogen oxides (NOx)
Hazardous Reactions	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute Oral Toxicity	male/female combined rat: LD50: 3,580 mg/kg
Acute Dermal Toxicity	rat: LD50: > 4,000 mg/kg
Acute Inhalation Toxicity	male/female combined rat: LC50: > 2.6 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. male/female combined rat: LC50: > 10.4 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: Slight irritation.
Sensitization	May cause sensitization by skin contact.
Chronic Toxicity	Thiram targeted the liver, blood and urinary system in chronic toxicity studies in laboratory animals.

Assessment Carcinogenicity

Thiram did not demonstrate any biologically significant evidence of carcinogenic potential in rats and mice. EPA has classified thiram as "not likely to be carcinogenic to humans."

ACGIH

Thiram

137-26-8

Group A4



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NTP

None.

IARC

Thiram

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Overall evaluation: 3

Thiram

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Overall evaluation: 3

OSHA

None.

**Reproductive &
Developmental Toxicity**

REPRODUCTION: Thiram was not a reproductive toxicant in multi-generation reproduction studies in rats.

DEVELOPMENTAL TOXICITY: Thiram is a developmental toxicant.

Neurotoxicity

Thiram caused neurotoxic effects (e.g. lethargy, reduced activity) in laboratory animals.

Mutagenicity

Thiram was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

**Environmental
Precautions**

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. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

**General Disposal
Guidance**

Pesticide wastes are toxic. 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. Open dumping is prohibited.

Container Disposal

Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

RCRA Classification

The RCRA Classifications may be on the individual component(s) and not necessarily on the product as a whole.

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US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): U244

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US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U244

SECTION 14. TRANSPORT INFORMATION**TRANSPORTATION CLASSIFICATION:**

RQ, Environmentally Hazardous Substances, Liquid, N.O.S.(Thiram) // 9 // UN3082 // PG III

IMDG CLASSIFICATION:

RQ, Environmentally Hazardous Substances, Liquid, N.O.S.(Thiram) // 9 // UN3082 // PG III // Marine Pollutant

FREIGHT CLASSIFICATION:

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

SECTION 15. REGULATORY INFORMATION**EPA Registration No.** 264-929**US Federal Regulations****TSCA list**

Thiram	137-26-8
1,2-Propanediol	57-55-6

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

Thiram	137-26-8	1.0%
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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

Thiram	137-26-8	CA, CT, IL, MN, NJ, PA, RI
1,2-Propanediol	57-55-6	MN, RI

Canadian Regulations**Canadian Domestic Substance List**

Thiram	137-26-8
1,2-Propanediol	57-55-6

Environmental



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CERCLA

Thiram

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10 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Thiram

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1,2-Propanediol

57-55-6

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2

Flammability - 1

Reactivity - 1

Others - none

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

Reason to Revise: Updated Section 11: Toxicological Information.

Revision Date: 06/18/2007

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