



Material Safety Data Sheet

THIRAM 50WP

MSDS Number: 102000012744

MSDS Version 2.1

Revision Date: 06/21/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name THIRAM 50WP
MSDS Number 102000012744
EPA Registration No. 264-942

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. 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 dust or spray mist.

Physical State solid

Odor weak characteristic

Appearance white to off-white

Exposure routes Inhalation, Skin Absorption, Ingestion, 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 Inhalation of dust may cause mucous membrane and respiratory irritation. Harmful if inhaled. Avoid breathing dust or spray mist.



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Chronic or Delayed Long-Term

This product is not listed as a carcinogen by ACGIH, NTP, IARC or OSHA. However, it may contain crystalline silica (quartz), a substance which has been listed as a carcinogen by ACGIH, NTP and IARC. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although the carcinogenic potential of crystalline silica in humans is controversial, it must be considered if it is inhaled under excessive exposure conditions. The respirable portion of the silica that may be contained in this product, however, is small, such that inhalation exposure during anticipated conditions of use is minimal.

Medical Conditions Aggravated by Exposure

Individuals with allergic history or pre-existing dermatitis should use extra care in handling this product. As with all materials which can cause upper respiratory tract irritation, persons with a history of asthma, emphysema, or hyperreactive airways disease may be more susceptible to overexposure. Pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

Potential Environmental Effect

Toxic to fish, birds, and other wildlife.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Thiram	137-26-8	50.00
Titanium dioxide	13463-67-7	1.16
Quartz (Silica, Crystalline)	14808-60-7	0.45
Crystalline quartz (respirable)		

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



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poison control center immediately.

**Notes to physician
Signs and
Symptoms**

More severe effects if alcohol is consumed.
Ingestion may provoke the following symptoms:
Nausea
Vomiting
breathing difficulties

Treatment

Treat symptomatically. There is no specific antidote.

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.

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

Fire Fighting Instructions Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

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 Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. 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.

Keep away from heat and sources of ignition.



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Storing Procedures Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, 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, using the toilet or applying cosmetics.

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.

Min/Max Storage Temperatures Recommended minimum transport/storage temperature: -7 °C / 19 °F
Recommended maximum transport/storage temperature: 49 °C / 120 °F

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

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
		OES BCS*	TWA	5 mg/m3
		ACGIH	TWA	0.05 mg/m3
		TX ESL	ST ESL	10 ug/m3
		TX ESL	AN ESL	1 ug/m3
				0.5 mg/m3
				1.5 mg/m3



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Kaolin	1332-58-7	ACGIH	TWA	2 mg/m3
		NIOSH	REL	5 mg/m3
		NIOSH	REL	10 mg/m3
		US CA OEL	TWA PEL	2 mg/m3
		TX ESL	ST ESL	20 ug/m3
		TX ESL	AN ESL	2 ug/m3
		TX ESL	ST ESL	20 ug/m3
		TX ESL	AN ESL	2 ug/m3
			TWA	10 mg/m3
			TWA	5 mg/m3
Titanium dioxide	13463-67-7	ACGIH	TWA	10 mg/m3
		OSHA Z1	REL	15 mg/m3
		OSHA Z1A	TWA	10 mg/m3
		TX ESL	ST ESL	50 ug/m3
		TX ESL	AN ESL	5 ug/m3
			TWA	10 mg/m3
Quartz (Silica, Crystalline)	14808-60-7	ACGIH	TWA	0.025 mg/m3
		NIOSH	REL	0.05 mg/m3
		OSHA Z1A	TWA	0.1 mg/m3
		Z3	TWA	2.4 millions of particles per cubic foot of air
		Z3	TWA	0.1 mg/m3
		Z3	TWA	0.3 mg/m3
		US CA OEL	TWA PEL	0.1 mg/m3
		US CA OEL	TWA PEL	0.3 mg/m3
		TX ESL	ST ESL	1 ug/m3
		TX ESL	ST ESL	1 ug/m3
		TX ESL	AN ESL	0.1 ug/m3
		TX ESL	AN ESL	0.1 ug/m3
		TX ESL	ST ESL	10 ug/m3
		TX ESL	AN ESL	1 ug/m3
			TWA	0.1 mg/m3

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to off-white
Physical State	solid
Odor	weak characteristic
Bulk density	18.5 - 26 lbs/cu.ft.
Water solubility	suspensive



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SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Heat, flames and sparks.
Incompatibility	Acids Oxidizing agents Copper
Hazardous Decomposition Products	Thermal decomposition nitrogen oxides (NOx) Sulphur oxides hydrogen sulfide carbon disulphide
Chemical Stability	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.

Acute oral toxicity	rat: LD50: > 2,000 mg/kg
Acute dermal toxicity	rabbit: LD50: > 2,000 mg/kg
Acute inhalation toxicity	rat: LC50: > 2.0 mg/l Exposure time: 1 h
Skin irritation	slight irritation
Eye irritation	Moderate eye irritation.
Sensitisation	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
Titanium dioxide	13463-67-7	Group A4
Quartz (Silica, Crystalline)	14808-60-7	Group A2

NTP

Crystalline quartz (respirable)

IARC



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Thiram	137-26-8	Overall evaluation: 3
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Titanium dioxide	13463-67-7	Overall evaluation: 2B
Quartz (Silica, Crystalline)	14808-60-7	Overall evaluation: 1

OSHA

None.

Reproductive 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 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 contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Apply this product as specified on the label. Do not allow to get into surface water, drains and ground water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Ecological Information	Exposed treated seed may be hazardous to birds.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Open dumping is prohibited. 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.
Container Disposal	Do not re-use empty containers. Rinsed packaging may be acceptable for landfill, otherwise incineration will be required in accordance with local regulations. If burned, stay out of smoke.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.



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SECTION 14. TRANSPORT INFORMATION

49CFR

UN-Number	3077
Class	9
Packaging group	III
Marine pollutant	Marine Pollutant
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (THIRAM)
RQ	Reportable Quantity is reached with 20 lb of product.

IMDG

UN-Number	3077
Class	9
Packaging group	III
Marine pollutant	Marine Pollutant
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIRAM MIXTURE)

IATA

UN-Number	3077
Class	9
Packaging group	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIRAM MIXTURE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 264-942

US Federal Regulations

TSCA list

Thiram	137-26-8
Titanium dioxide	13463-67-7
Quartz (Silica, Crystalline)	14808-60-7

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 contains a chemical known to the State of California to cause cancer.
Crystalline quartz (respirable)

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, RI
Titanium dioxide	13463-67-7	IL, MN, RI
Quartz (Silica, Crystalline)	14808-60-7	IL, MA

Canadian Regulations

Canadian Domestic Substance List

Thiram	137-26-8
Titanium dioxide	13463-67-7
Quartz (Silica, Crystalline)	14808-60-7

Environmental

CERCLA

Thiram	137-26-8	10 lbs
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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	137-26-8
Titanium dioxide	13463-67-7
Quartz (Silica, Crystalline)	14808-60-7

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 2 Reactivity - 1 Others - none

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

Reason to Revise: Updated for general editorial purposes.

Revision Date: 06/21/2010

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