



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

1/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name 42-S THIRAM FUNGICIDE

Product code (UVP) 80993358

SDS Number 102000026992

EPA Registration No. 264-929

Relevant identified uses of the substance or mixture and uses advised against

Use Fungicide, Repellent, Seed treatment

Restrictions on use See product label for restrictions.

Information on manufacturer

Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number 1-866-99BAYER (1-866-992-2937)

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Specific target organ toxicity - repeated exposure : Category 2

Acute toxicity (Inhalation): Category 4



Signal word: Warning

Hazard statements

May cause damage to organs (liver) through prolonged or repeated exposure.
Harmful if inhaled.

Precautionary statements

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Use only outdoors or in a well-ventilated area.



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

2/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

Get medical advice/attention if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Dispose of contents/container in accordance with local regulation.

Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Thiram	137-26-8	42.00
1,2-Propanediol	57-55-6	10.00
Urea	57-13-6	1.00

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
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.
Skin contact	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.
Eye contact	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.
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.

Most important symptoms and effects, both acute and delayed

Symptoms	Prolonged and repeated contact with skin, eyes or mucous membranes may cause irritation.
-----------------	--

Indication of any immediate medical attention and special treatment needed

Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.
------------------	---



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

3/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable None known.

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Evacuate personnel to safe areas. Avoid contact with spilled product or contaminated surfaces. 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. Whenever possible, contain fire-fighting water by diking area with sand or earth.

Flash point > 93.4 °C
Autoignition temperature no data available
Lower explosion limit no data available
Upper explosion limit no data available
Explosivity not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Do not breathe vapour.
Remove all sources of ignition.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). 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. Do not allow product to contact non-target plants.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

4/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling 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.

Hygiene measures 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.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers 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. Protect from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Thiram (Inhalable fraction and vapor.)	137-26-8	0.05 mg/m3 (TWA)	02 2012	ACGIH
Thiram (Inhalable fraction and vapor.)	137-26-8	0.05 mg/m3 (TWA)	02 2013	ACGIH NIC
Thiram	137-26-8	5 mg/m3 (REL)	2010	NIOSH
Thiram	137-26-8	5 mg/m3 (PEL)	02 2006	OSHA Z1
Thiram	137-26-8	5 mg/m3 (TWA)	1989	OSHA Z1A
Thiram	137-26-8	5 mg/m3 (TWA)	06 2008	TN OEL
Thiram	137-26-8	10ug/m3 (ST ESL)	07 2011	TX ESL
Thiram	137-26-8	1ug/m3 (AN ESL)	07 2011	TX ESL
Thiram	137-26-8	5 mg/m3	08 2010	US CA OEL



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

5/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

		(TWA PEL)		
Thiram	137-26-8	5 mg/m3 (MAK)		OES BCS*
1,2-Propanediol (Vapor.)	57-55-6	1000ug/m3 (ST ESL)	02 2013	TX ESL
1,2-Propanediol (Vapor.)	57-55-6	50ppb (AN ESL)	02 2013	TX ESL
1,2-Propanediol (Vapor.)	57-55-6	500ppb (ST ESL)	02 2013	TX ESL
1,2-Propanediol (Vapor.)	57-55-6	100ug/m3 (AN ESL)	02 2013	TX ESL
1,2-Propanediol (Aerosol.)	57-55-6	10 mg/m3 (TWA)	2010	WEEL
Urea (Particulate.)	57-13-6	5ug/m3 (AN ESL)	02 2013	TX ESL
Urea (Particulate.)	57-13-6	50ug/m3 (ST ESL)	02 2013	TX ESL
Urea (Total particulate.)	57-13-6	10 mg/m3 (TWA)	2010	WEEL
Urea	57-13-6	10 mg/m3		OES BCS*

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

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

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.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Chemical resistant goggles must be worn.

Skin and body protection

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

General protective measures

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

white to beige



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

6/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

Physical State	Liquid
Odor	characteristic
Odour Threshold	no data available
pH	6.5 - 7.5 at 100 %
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.17 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	miscible
Minimum Ignition Energy	not applicable
Decomposition temperature	not applicable
Partition coefficient: n-octanol/water	no data available
Viscosity	600 - 1,000 mPa.s
Flash point	> 93.4 °C
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. freezing
Incompatible materials	Copper, Oxidizing agents, Strong acids
Hazardous decomposition products	No decomposition products expected under normal conditions of use.



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

7/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Inhalation, Ingestion, Skin Absorption, Eye contact

Immediate Effects

Skin Harmful if absorbed through skin.

Ingestion Harmful if swallowed.

Inhalation Harmful if inhaled.

Information on toxicological effects

Acute oral toxicity LD50 (male/female combined rat) 3,580 mg/kg

Acute inhalation toxicity LC50 (male/female combined rat) > 2.6 mg/l
Exposure time: 4 h
Determined in the form of a respirable aerosol.

LC50 (male/female combined rat) > 10.4 mg/l
Exposure time: 1 h
Determined in the form of a respirable aerosol.
Extrapolated from the 4 hr LC50.

Acute dermal toxicity LD50 (rat) > 4,000 mg/kg

Skin irritation Slight irritation (rabbit)

Eye irritation Slight irritation (rabbit)

Sensitisation

May cause sensitisation by skin contact.

Assessment repeated dose toxicity

Thiram caused specific target organ toxicity in experimental animal studies in the following organ(s):
liver, forestomach.

Assessment Mutagenicity

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

Assessment Carcinogenicity

Thiram was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

Thiram 137-26-8 Group A4

NTP

None.

IARC

Thiram 137-26-8 Overall evaluation: 3

OSHA

None.



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

8/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

Assessment toxicity to reproduction

Thiram did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Thiram caused developmental toxicity only at dose levels toxic to the dams.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Fish) 0.046 - 1.20 mg/l The value mentioned relates to the active ingredient thiram.
Toxicity to aquatic invertebrates	LC50 (Daphnia) > 0.2 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient thiram.
Toxicity to aquatic plants	EC50 (Algae) 0.14 mg/l Exposure time: 120 h The value mentioned relates to the active ingredient thiram.
Biodegradability	Thiram: ; not rapidly biodegradable
Koc	Thiram: Koc: 2245 - 24526
Bioaccumulation	Thiram: Bioconcentration factor (BCF) 3.9
Mobility in soil	Thiram: Immobile in soil
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. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product 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.



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

9/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

	Open dumping is prohibited. Follow advice on product label and/or leaflet.
Contaminated packaging	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 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.

SECTION 14: TRANSPORT INFORMATION

49CFR

UN number	3082
Class	9
Packaging group	III
Marine pollutant	Marine pollutant
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (THIRAM)
RQ	Reportable Quantity is reached with 23 lb of product.

IMDG

UN number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIRAM SOLUTION)

IATA

UN number	3082
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIRAM SOLUTION)

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.



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

10/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-929

US Federal Regulations

TSCA list

Thiram	137-26-8
1,2-Propanediol	57-55-6
Urea	57-13-6

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%
--------	----------	------

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, RI
1,2-Propanediol	57-55-6	MN
Urea	57-13-6	MN

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

Thiram	137-26-8	10 lbs
--------	----------	--------

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:



42-S THIRAM FUNGICIDE

Version 2.0 / USA
102000026992

11/11
Revision Date: 09/02/2014
Print Date: 02/04/2015

Signal word: Caution!

Hazard statements: Harmful if swallowed.
Harmful if absorbed through skin.
Harmful if inhaled.
Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapour or mist.
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2 Flammability - 1 Physical Hazard - 1 PPE -

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

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 09/02/2014

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.