



Material Safety Data Sheet

Last Revision: 05/07/2007

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PERKACIT® TMTD

MSDS NO. FLXP0056

Chemical Name: Tetramethylthiuram Disulfide

Synonyms: THIURAD; THIRAM; Bis(dimethyldithiocarbamoyl)disulfide; Thioperoxydicarbonic diamide, tetramethyl-

Use: Accelerator.

Manufactured By: Flexsys America L.P. 260 Springside Drive Akron OH 44333-2433 USA

Emergency Telephone: **CHEMTREC:** 1-800-424-9300 [TOLL FREE - USA and Territories]
703-527-3887 [ELSEWHERE - Collect Calls Accepted]
CANUTEC: 613-996-6666 [Canada]
SETIQ: 91-800-00-214 [Mexico]

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2. HAZARDS IDENTIFICATION

Emergency Overview: WARNING! Dust may be irritating to eyes and upper respiratory tract. Fine dust clouds may form explosive mixtures with air. Highly toxic to fish and aquatic invertebrates. May cause sensitization by skin contact. May cause alcohol intolerance.

Eye Contact: Causes mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing.

Skin Contact: May cause an allergic skin reaction. May be absorbed through the skin and product effects similar to those caused by inhalation and/or ingestion.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Inhalation may cause alcohol intolerance

Ingestion: May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Tetramethylthiuram Disulfide	137-26-8	> 97
Ethoxylated Alcohols [in -pdr-d and 3mm-grs ONLY]	68439-50-9	1 - 2

4. FIRST AID MEASURES

In Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

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**HARWICK STANDARD
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60 S. Seiberling Street • Akron, Ohio 44305

4. FIRST AID MEASURES

On Skin:	In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.
Inhaled:	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.
Swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.
Notes To Physician:	Treat symptomatically. Exposure by ingestion, inhalation or skin absorption may cause alcohol intolerance (Antabuse Effect).

5. FIRE FIGHTING MEASURES

Flash Point (°F/C):	280°F / 138°C
Flash Point Method:	Pensky-Martens Open Cup
Autoignition Temp. (°F/C):	Not determined.
Lower Explosion Limit (LEL):	Not determined.
Upper Explosion Limit (UEL):	Not determined.
Extinguishing Media:	Use water fog, carbon dioxide, foam or dry chemical.
Special Exposure Hazards:	Fight fire from a safe distance and from a protected location. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.
Special Protective Equipment:	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.
Unusual Fire/Explosion Hazards:	Toxic emissions may result if product is involved in a fire.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:	Isolate the area. Turn off/remove all potential sources of ignition. Work only with non-sparking tools and equipment. Wear gloves.
Procedure for Cleaning/Absorption:	Scoop up and remove solids. Place spilled material in a closable container for hazardous waste disposal. Do NOT spread spilled product with water.
CERCLA Reportable Quantity (RQ):	10 Pounds / 4.54 Kilograms [USA]

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid generating or breathing dust. Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Reclose containers of unused product. Keep containers tightly closed when not in use. Do not reuse this container.
Storage:	Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials. Avoid exposure to direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection:	Wear safety glasses or goggles to protect against exposure.
Skin Protection:	Normal work coveralls. Launder contaminated clothing before reuse.
Gloves:	Use gloves as a standard industrial handling procedure. Appropriate chemical resistant gloves should be worn.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:	Use in a well ventilated area. Use approved NIOSH respiratory protection if TLV exceeded or if overexposure is likely. Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.
Ventilation:	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product.
Airborne Exposure Limits:	Tetramethylthiuram Disulfide OSHA PEL/8-Hr TWA = 5 mg/m ³ ACGIG TLV/8-Hr TWA = 1 mg/m ³

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White powder or granules
Odor:	SLIGHT
pH:	Not Applicable
Specific Gravity:	1.43 @20°C
Density:	1.4
Bulk Density:	1425 kg.m ³ @20°C
Melting Point (°F/C):	142-157°C
Boiling Point (°F/C):	Not Determined
Vapor Pressure:	1.725 x 10(-5) mmHg @ 25°C
Vapor Density (Air=1):	Not Applicable
% Volatile by Volume:	Less than 0.5% by weight
Solubility in Water:	30 mg/l @25°C
Other Solubility:	Soluble in: Acetone Organic liquids, including fats and oils Carbon Disulfide
Viscosity:	Not Applicable
Other Data:	Ash content = 0.3% max.
Molecular Weight:	240.44
Molecular Formula:	C6-H12-N2-S4

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation.
Hazardous Polymerization:	WILL NOT OCCUR
Conditions to Avoid:	Keep away from heat, sparks and flame. Exposure to heat and humidity.
Materials to Avoid:	Avoid contact with acidic, basic or oxidizing agents.
Hazardous Decomposition Products:	Carbon monoxide. Oxides of nitrogen. Oxides of sulfur.
Additional Guidelines:	None.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD50 (mg/kg):	1080 mg/kg (Rat)
Acute Dermal LD50 (mg/kg):	>7940 mg/kg (Rabbit)
Acute Inhalation LC50 (mg/l):	500 mg/m ³ (Rat)

Target Organs / Principle Routes of Exposure: Dermal - skin. Inhalation.

Ingestion:	May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation.
Skin Contact:	May cause an allergic skin reaction. May be absorbed through the skin and product effects similiar to those caused by inhalation and/or ingestion.
Inhalation:	Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Inhalation may cause alcohol intolerance
Eye Contact:	Causes mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing.

11. TOXICOLOGICAL INFORMATION

Aggravated Conditions:	Alcohol consumption problems. Dermal ailments.
Carcinogenicity Comment:	This product, or one of its ingredients present at 0.1% or more, is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC or OSHA. NOTE: May react with nitrosating agents during rubber vulcanization to form nitrosamines. Some nitrosamines are suspect human carcinogens.
Other Information:	Ingestion, inhalation or skin absorption may cause alcohol intolerance [Antabuse effect].
Primary Irritation Effect:	Practically non-irritating to skin and eyes. Probable skin sensitizer.
Carcinogenicity:	Both negative and positive results have been found in standard tests using bacteria. Negative, positive and equivocal results in have been found in standard in vitro and in vivo tests using animals, animal and bacterial cells.
Genotoxicity:	Both positive and negative effects have been reported in standard tests using animals and animal cells.
Reproductive/Developmental Toxicity:	Animal studies have shown some adverse effects - low birth weight of pups, maternal toxicity - on female animals. Chronic animal studies have shown this material to cause reproductive effects, blood effects and organ weight changes. Some animal studies have shown adverse effects on fetal development.

12. ECOLOGICAL INFORMATION

Acute Fish Toxicity:	96Hr LC50 Rainbow Trout 0.13 mg/l 96Hr LC50 Bluegill Sunfish 0.13 mg/l 96Hr LC50 Guppy 0.27 mg/l
Acute Crustaceans Toxicity:	48Hr LC50 Daphnia Magna 0.21 mg/l
Acute Algae Toxicity:	96Hr EC50 1.00 mg/l
Octanol/Water Coefficient:	1.82 log P
Chemical Fate Information:	Hydrolysis Half-life: 9.5 hrs @ pH 3.5 108 hrs @ pH 5.7 1123 hrs @ pH 7.0 3316 hrs @ pH 8.0
Other Information:	Tests indicate this material will not bioaccumulate or persist in the environment.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method:	This product, if disposed as received, is a listed hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Treatment, storage, reuse and disposal of the waste material must conform to all applicable federal, state and local laws and regulations.
Contaminated Packaging:	This bag may contain residue of a hazardous material. Some authorities may regulate such containers as hazardous waste. Dispose of container according to national or local regulations.

14. TRANSPORT INFORMATION

DOT:	UN 3077, Environmentally Hazardous Substance, Solid, N.O.S., (Tetramethylthiuram Disulfide), 9, III
DOT Reportable Quantity (lbs):	10 pounds
ICAO/IATA:	See DOT
IMDG:	See DOT
Marine Pollutant:	Yes
TDG (Canada):	See DOT
Remarks:	None

15. REGULATORY INFORMATION

Worldwide Inventory Status

USA (TSCA): Listed

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15. REGULATORY INFORMATION

Canada (DSL):	Listed
Canada (NDSL):	Not Applicable. Listed on the DSL.
European Union (EINECS/ELINCS):	Listed
Japan (ENCS):	Listed
Korea (ECL):	Listed
Australia (AICS):	Listed
New Zealand (NZ):	Listed
Phillipines (PICCS):	Listed
China (CLECS):	Listed.

US Regulatory Rules

SARA Section 302:	Not Applicable / None
SARA 311/312 Hazard Categories:	Immediate Delayed
SARA 313 Chemical:	Listed as "Thiram"
RCRA Status:	RCRA Hazardous Waste U244

Other Regulations:

California Proposition 65:	NONE
New Jersey Right-to-Know List:	Listed NJ Substance ID #1854.
Pennsylvania Right to Know List:	Listed
Florida Right to Know:	Listed
Minnesota Right to Know:	Listed
Massachusetts Right to Know Law:	Listed Massachusetts Reportable Quantity (RQ) = 5 POUNDS.

FDA Status 21 CFR:	Regulated for Use under the following sections of 21 CFR: 177.2600 Rubber Articles Intended for Repeated Use in Food Contact. 175.105 Components of Adhesives. IMPORTANT NOTE: FDA information applies to the -pdr and -pdr-s product forms (no dedusting additive) ONLY.
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Canadian Regulations

WHMIS Hazard Class:	D2A VERY TOXIC MATERIALS D2B TOXIC MATERIALS / Materials Causing Other Toxic Effects
NPRI:	Not Listed. [Canada]

16. OTHER INFORMATION

Hazard Rating Systems:

HMIS Classification:	HEALTH 2, FLAMMABILITY 1, REACTIVITY 0
NFPA Rating:	HEALTH 1, FLAMMABILITY 1, REACTIVITY 0

The following has been revised since the last issue of this MSDS: New MSDS format.

Additional Information: WHMIS Ingredient Disclosure List (Canada): WHMIS Concentration threshold = 1%. Canadian Workplace OELs apply in Alberta, British Columbia, Ontario and Quebec. Mexican Workplace OELs apply.

Important Note: This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

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*****END OF MSDS*****

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