



Material Safety Data Sheet

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PERKACIT® ZDMC
MSDS NO. FLXP0026
Chemical Name: Zinc Dimethyldithiocarbamate
Synonyms: Bis(Dimethyldithiocarbamato)zinc; Methasan; Ziram
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]
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2. HAZARDS IDENTIFICATION

Emergency Overview: DANGER! Combustible dust - explosion potential. May be fatal if inhaled. This material is irritating to skin, eyes and respiratory tract. May cause alcohol intolerance. Harmful if swallowed.

Eye Contact: Causes moderate eye irritation. Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing and hazy vision.

Skin Contact: May cause an allergic skin reaction. May cause skin defatting with prolonged exposure. Causes mild skin irritation. Skin absorption may cause alcohol intolerance.

Inhalation: May be fatal if inhaled. 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. Harmful if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Zinc Dimethyldithiocarbamate	137-30-4	96 - 99
White Mineral Oil [-pdr-d form ONLY]	8042-47-5	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.

On Skin: Remove contaminated clothing and launder before reuse. Wash with soap and water. If irritation persists or signs of toxicity occur, seek medical attention.

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60 S. Seiberling Street • Akron, Ohio 44305

4. FIRST AID MEASURES

Inhaled:	Seek immediate medical attention! May be fatal if inhaled! Move person to fresh air. Have trained personnel administer oxygen.
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). Monitor respiratory system function. Observe for signs of respiratory distress.

5. FIRE FIGHTING MEASURES

Flash Point (°F/C):	200°F / 93°C
Flash Point Method:	Tag Closed Cup (TCC)
Autoignition Temp. (°F/C):	752°F / 400°C
Lower Explosion Limit (LEL):	40 g/m ³ .
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. Combustible dust - explosion potential.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:	Wear protective equipment specified. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.
Procedure for Cleaning/Absorption:	Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Scoop up and remove solids. 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. All cleanable impervious glove types are acceptable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection:	Use in a well ventilated area. Use respirators in accordance with the code of federal regulations, labor part 1910.134 and reduce occupational exposure to the lowest achievable limits. Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure. Use NIOSH approved dust respirator. Firefighting: Use a Positive Pressure Demand Full Face Self Contained Breathing Apparatus.
Ventilation:	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product. Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with the applicable air pollutions control regulations. Eliminate ignition sources.
Airborne Exposure Limits:	OSHA PEL/8-Hr TWA: None Established. Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m ³ (Total Dust). OSHA PEL/8-Hr TWA = 05 mg/m ³ (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m ³ . White Mineral Oil OSHA PEL/8-Hr TWA = 5mg/m ³ ACGIH TLV/8-Hr TWA = 5mg/m ³ . NOTE: White Mineral Oil is a component of the oil-treated/dedusted product form [-pdr-d] ONLY.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white powder.
Odor:	SLIGHT
pH:	Not Applicable
Specific Gravity:	1.66 @20°C
Density:	1.7
Bulk Density:	330 - 370 kg/m ³ ZDMC-pdr 355 - 395 kg/m ³ ZDMC-pdr-d
Melting Point (°F/C):	460°F / 238°C
Boiling Point (°F/C):	Not Determined
Vapor Pressure:	Negligible @ 20°C. <0.001 mPa, 7.5E-009 mm Hg.
Vapor Density (Air=1):	Not Determined
% Volatile by Volume:	<0.5% by weight
Solubility in Water:	65 mg/l @ 25°C
Other Solubility:	Soluble in: Benzene Carbon Disulfide Organic liquids, including fats and oils Acetone
Viscosity:	Not Applicable.
Other Data:	Zinc Content: 20.5 - 22.0 % for -pdr; 20.2 - 21.7% for -pdr-d [dedusted/oil treated]
Molecular Weight:	305.8
Molecular Formula:	C6-H12-N2-S4-Zn

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. Avoid contact with strong oxidants such as liquid chlorine and concentrated oxygen.
Materials to Avoid:	Strong oxidizing agents. Acids. Contact with acids may produce toxic gas.
Hazardous Decomposition Products:	Carbon monoxide. Oxides of nitrogen. Oxides of sulfur. Toxic zinc metal fumes
Additional Guidelines:	None.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD50 (mg/kg):	650 mg/kg (Rat)
Acute Dermal LD50 (mg/kg):	>5010 mg/kg (Rabbit)
Acute Inhalation LC50 (mg/l):	4Hr LC50 = 0.026-0.081 mg/l (Rat)

11. TOXICOLOGICAL INFORMATION

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

Ingestion:	May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation. Harmful if swallowed.
Skin Contact:	May cause an allergic skin reaction. May cause skin defatting with prolonged exposure. Causes mild skin irritation. Skin absorption may cause alcohol intolerance.
Inhalation:	May be fatal if inhaled. Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Inhalation may cause alcohol intolerance.
Eye Contact:	Causes moderate eye irritation. Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing and hazy vision.
Aggravated Conditions:	Alcohol consumption problems. Pulmonary disorders. This material or its emissions may cause an allergic or sensitization reaction and thereby aggravate systemic disease.
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:	Decomposition products and fumes from vulcanization and cross-linking may cause eye, skin and respiratory sensitization. May be a skin sensitizer.
Primary Irritation Effect:	Possible sensitizer. Slightly irritating
Carcinogenicity:	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. Animal studies have shown some adverse effects on male animals and offspring.

12. ECOLOGICAL INFORMATION

Acute Fish Toxicity:	96Hr LC50 Rainbow Trout = 0.75 mg/l. 96Hr LC50 Bluegill Sunfish = 1.20 mg/l. 5Hr LC50 Goldfish = 5.0 mg/l.
Acute Crustaceans Toxicity:	48Hr EC50 Daphnia Magna = 0.23 mg/l.
Acute Algae Toxicity:	96Hr EC50 Algae = 1.2 mg/l.
Octanol/Water Coefficient:	Log P = 1.23.
Chemical Fate Information:	Rapidly degraded by ultraviolet light, heat and moisture. Moderately bound to soil. Rapid hydrolysis in acidic water.
Other Information:	LD50 Redwing Blackbird = 100 mg/kg. Bioconcentration Factor [BCF] = 90 (Trout), 4.7 (Guppy). Hydrolysis Half-life: 0.25 Hr @ pH3.8, 9.1 Hr @ pH5.7, 121 Hr @ pH 7.0, 433 Hr @ pH 8.0.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method:	This material is a HAZARDOUS WASTE. Incineration recommended in 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. Do NOT reuse container.

14. TRANSPORT INFORMATION

DOT:	UN 2811, Toxic Solid, Organic, N.O.S., (Zinc Dimethyldithiocarbamate), 6.1, I
DOT Reportable Quantity (lbs):	None
ICAO/IATA:	See DOT

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14. TRANSPORT INFORMATION

IMDG: See DOT
Marine Pollutant: No
TDG (Canada): See DOT

Remarks: None

15. REGULATORY INFORMATION

Worldwide Inventory Status

USA (TSCA): Listed
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
SARA 313 Chemical: As "Zinc Compounds"; De Minimis concentration = 1.0%.
RCRA Status: P205 - ACUTELY HAZARDOUS WASTE

Other Regulations:

California Proposition 65: NONE
New Jersey Right-to-Know List: Listed As "Zinc Compounds". NJ Substance #3012.
Pennsylvania Right to Know List: Listed As "Zinc Compounds".
Florida Right to Know: Not Applicable.
Minnesota Right to Know: Listed
Massachusetts Right to Know Law: Listed As "Zinc Compounds". as "MILBAN".

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.
178.3120 Animal Glue.

Canadian Regulations

WHMIS Hazard Class: D1A VERY TOXIC MATERIALS. D2A VERY TOXIC
MATERIALS D2B TOXIC MATERIALS / Materials Causing
Other Toxic Effects
NPRI: Listed under the category "Zinc and Its Compounds", NPRI
Part 1, Group 1, ID# 231 [Canada]. Minimum concentration
to report = 1%.

16. OTHER INFORMATION

Hazard Rating Systems:

HMIS Classification: HEALTH 4, FLAMMABILITY 1, REACTIVITY 0
NFPA Rating: HEALTH 4, FLAMMABILITY 1, REACTIVITY 0

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16. OTHER INFORMATION

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

Additional Information:

NOTE: MINERAL OIL IS PRESENT IN THE DEDUSTED (pdr-d) PRODUCT FORM ONLY. WHMIS Ingredient Disclosure List (Canada): WHMIS Concentration threshold = 1%. "Zinc Compounds" are included on the Connecticut, California, Michigan and Illinois Hazardous Materials Lists (USA). "Zinc Compounds" are also regulated as a Clean Water Act Section 311 Hazardous Substance (USA).

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.

END OF MSDS