

Rhenogran® ZDMC-80

Predispersed rubber chemicals and additives

Function

Ultra accelerator for the vulcanization of natural and synthetic rubbers

Product description

Composition:	80 % zinc dimethyl dithiocarbamate 20 % elastomer binder and dispersing agents
Appearance:	grey to yellowish granules
Density, 20 °C:	approx. 1.47 g/cm ³
Physiological properties:	see safety data sheet

Use

Mode of action:	Rhenogran ZDMC-80 causes very rapid vulcanization of natural and synthetic rubbers, e.g. SBR, NBR and EPDM. The addition of thiuram and thiazole accelerators retards the start of the vulcanization and increases processing safety. Rhenogran ZDMC-80 gives a longer scorch time and a faster total curing time than Rhenogran ZDBC-80, Rhenogran ZDEC-80 and Rhenogran ZEPC-80. Rhenogran ZDMC-80 receives an additional activation from basic accelerators. Rhenogran ZDMC-80 is also used in small amounts for secondary acceleration and for the activation of mixes, which are going to be cured with mercapto or thiuram accelerators. Rhenogran ZDMC-80 provides very good tensile and resilience properties. For improving the resistance to aging it is recommended to add antioxidants.
Processing:	The thermoplastic, fully compatible elastomer binder which is combined with special dispersing agents allows quick absorption and excellent dispersion in the rubber. In this way, optimal activity of the effective substance is assured.
Dosage:	in NR: 0.3-0.8 phr; as secondary accelerator: 0.05-0.3 phr in NBR, SBR: 0.8-1.2 phr; as secondary accelerator: 0.05-0.3 phr
Application:	Bright-colored articles, transparent articles, cables

Packing

25 kg paper bags on 1000 kg skid

Storage stability

In original closed containers under cool and dry conditions 730 days from date of production

Handling

For additional handling information on Rhenogran ZDMC-80 please consult current safety data sheet.

Our technical advice - whether verbal, in writing or by way of trials - is given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended processes and uses. The application, use and processing of the products are beyond our control and, therefore, entirely your own responsibility. Should, in spite of this, liability be established for any damage, it will be limited to the value of the goods delivered by us and used by you. We will, of course, provide products of consistent quality within the scope of our General Conditions of Sale and Delivery.



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Material Safety Data Sheet

Sovchem® ZDMC

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Manufacturer: Sovereign Chemical Company 1225 West Market Street Akron, Ohio 44313	Emergency Contact : Chemtrec: 1-800-424-9300 (continental USA) 1-703-527-3887 (outside continental USA)
Trade Name(s): Sovchem® ZDMC Powder	MSDS Number: 1842
Chemical Name: Zinc, bis (dimethylcarbomodithioato-s-s')	Synonyms: Zinc Dimethyl Dithiocarbamate, Ziram
Prepared By: Sovereign Chemical Company	Date of Issue: August 17, 2010 Revision Number: 1 Change(s): New

2. INGREDIENTS

<u>Component</u>	<u>CAS #</u>	<u>EINECS#</u>	<u>Percent</u>	<u>ACGIH (TLV)</u>
Zinc, bis (dimethylcarbomodithioato-s-s')	137-30-4	205-288-396	> 98	2.5 mg/M ³ (total dust)
Mineral Oil	8042-47-5	232-455-8	<2	5mg/m ³

3. 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.

HMIS@III Rating: Health – 4*, Flammability 1, Physical Hazard – 0, Personal Protection Equipment –J**
(safety glasses, apron, dust mask, gloves)

* Dust particles in air can be toxic, LC50 (inhalation, rat) 4 h 81 mg/m³. (Very Toxic)

**This is recommended personal protection equipment. Final personal protection equipment should be determined by the plant safety department based on the actual conditions under which the product is used.

Potential Health Effects:

Eye Contact: Causes mild eye irritation. Signs and symptoms can include redness, swelling, pain, and tearing.

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

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.

4. FIRST AID MEASURES

Skin: Wash off immediately with plenty of soap and water. Seek medical advice in case of skin rash. Remove contaminated clothing and launder before reuse.

Eye: Rinse immediately with plenty of water for at least 15 minutes. If irritation persists consult an ophthalmologist.

Ingestion: Seek medical advice immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air. Administer oxygen or artificial respiration if necessary. Get medical attention immediately. May be fatal if inhaled.

Note to Physician: Treat symptomatically. Exposure by ingestion, inhalation or skin absorption may cause alcohol intolerance (Atabuse Effect). Monitor respiratory system function; observe for signs of respiratory distress.

5. FIRE FIGHTING MEASURES

Flash Point: 93.0 °C (200 °F) Tag Closed Cup **LEL:** ND **UEL:** ND **Autoignition Temperature:** ND
Use water fog, carbon dioxide, foam, dry chemical. 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. Full protective clothing and approved self-contained, positive pressure full face breathing apparatus required for fire fighting personnel. Toxic emissions may result if product is involved in a fire.

6. ACCIDENTAL RELEASE MEASURES

Wear protective equipment specified in Section 8. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal. Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Scoop up and remove. Do NOT spread spilled product with water. CERCLA Reportable Quantity (RQ) is 1 Pound

7. HANDLING AND STORAGE

Storage Conditions: 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 the container.

Handling: Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials. Avoid exposure to direct sunlight and ignition sources.

8. EXPOSURE CONTROL - PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation should be provided. Design details for local exhaust ventilation systems may be found in the latest edition of "Industrial Ventilation: A Manual of Recommended Practices" published by the ACGIH and available at their web site, <http://www.acgih.org>. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust ventilation systems should be designed by a professional engineer.

Respiratory Protection: Use NIOSH approved dust respirator where applied engineering controls are not adequate to protect against inhalation exposure.

Eye Protection: Use safety glasses or goggles.

Protection Gloves: Appropriate chemical resistant gloves should be worn to prevent irritation and possible absorption. Cloth gloves are not recommended.

Other Protection Items: Neoprene or nitrile rubber coated apron or other body covering may be required if there is a possibility of regular work clothing becoming contaminated with the product. All soiled or dirty clothing and personal protective equipment should be thoroughly cleaned before reuse.

Airborne Exposure Limits: OSHA PEL/8-Hr TWA: None Established. Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m³ (Total Dust). OSHA PEL/8-Hr TWA = 05 mg/m³ (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m³. White Mineral Oil OSHA PEL/8-Hr TWA = 5mg/m³.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State: Off white powder	Melt Point: 460°F/238°C
Vapor Density (Air = 1): ND	Bulk Density: 355-395 kg/m ³ @20°C
Vapor Pressure: Negligible at 20 °C	Molecular Weight: 305.8
Odor: Slight	Specific Gravity: 1.66 @20°C
% Volatile by Volume: <0.5% by weight	Boiling Point: ND
% Solubility (H₂O) : Insoluble	pH: NA
Other Solubility: Soluble in Benzene, Carbon Disulfide, Organic liquids, including fats and oils, and Acetone	

10. STABILITY AND REACTIVITY

Stability /Polymerization: Stable under normal conditions. Hazardous polymerization will not occur.

Incompatibility (conditions to avoid): Avoid contact with strong oxidizing agents such as liquid chlorine and concentrated oxygen. Keep away from heat, sparks and flame.

Hazardous Decomposition Products: Carbon monoxide, nitrogen oxides, sulfur oxides, Toxic zinc metal fumes.

Special Sensitivity: None.

11. TOXICOLOGICAL INFORMATION

Target Organs Acute Oral LD50 (mg/kg): >1400 mg/kg

Acute Dermal LD50 (mg/kg): >6000 mg/kg

Acute Inhalation LC50 (mg/l): 4Hr LC50=0.26-0.81 mg/l

Principle Routes of Exposure: Dermal – skin. Inhalation.

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 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA. Carcinogenic: Category 3 NOTE: May react with nitrosating agents during rubber vulcanization to form nitrosamines. Some nitrosamines are suspect human carcinogens.

Other: May be a skin sensitizer.

Primary Irritation Effect: Moderately irritating. Possible sensitizer.

Carcinogenicity: Both negative and positive results in standard tests using animals, animal and bacterial cells.

Genotoxicity: Animal studies have shown possible birth defects.

Reproductive/Developmental Toxicity: Animal studies show adverse effects in both males and females.

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: ND

Octanol/Water Coefficient: 1.086 log Kow

Chemical Fate Information: Degraded by ultraviolet light, heat and moisture. Moderately bound to soil.

Other Information: LD50 Redwing Blackbird = 100 mg/kg.

13. DISPOSAL CONSIDERATIONS

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.

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. TRANSPORTATION INFORMATION

US DOT/ADR/RID/IMDG/IATA: UN 2811, TOXIC SOLID, ORGANIC, N.O.S. (zinc dimethyldithiocarbamate), 6.1, PG II.

15. REGULATORY INFORMATION

Worldwide Inventory Status TSCA (USA): Listed

Canadian DSL: Listed

Canadian NDSL: NA

EINECS/ELINCS (Europe): Listed

Japanese Inventory (ENCs): Listed

Korean Chemical Inventory (ECL): Listed

Australian Chemical Inventories (AICS): Listed

New Zealand (NZ): Listed

Philippines (PICCS) Inventory: Listed

China (CLECS): Listed

US Regulatory Rules SARA Section 302: N/A

SARA 311/312 Hazard Categories: Immediate

SARA 313 Chemical: As "Zinc Compounds"

RCRA Status: P205 –Acutely Hazardous Waste

California Proposition 65: None

New Jersey Right-to-Know List: Listed

Pennsylvania Right to Know List: Listed

Florida Right to Know: Listed

Minnesota Right to Know: Listed

MA Right to Know Law: Listed

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: NA

Code letter and hazard designation of product: Xn harmful

Risk Phrases: 22 Harmful if swallowed; 36/37/38 Irritating to eyes, respiratory system and skin; 68 Possible risk of irreversible effects.

Safety phrases: 2 Keep out of the reach of children, 36/37 Wear suitable protective clothing and gloves.

Water hazard class: water hazard class 3(self-assessment) extremely hazardous for water

16. OTHER INFORMATION

NE = Not Established

NA = Not Applicable

ND = Not Determined

IMPORTANT SAFETY NOTICE: The information in the Material Safety Data Sheet relates only to the specific material(s) described herein and does not relate to use in combination with any other material or substance or in any process. We believe that the information contained herein is current as of the date of issue of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of this product are not within the control of Sovereign Chemical Company, it is the user's obligation to determine the conditions of safe use of the product.

Users of this product should study this Material Safety Data Sheet and become aware of the product hazards and safety information before using the product. Users should also notify their employees, agents, and contractors of the information on this Material Safety Data Sheet and any product hazards and safety information in order to provide safe use of this product.

Sovereign Chemical Company
1225 West Market Street
Akron, OH 44313

Dear Customer:

Section 313 of SARA Title III (also known as the Emergency Planning and Community Right Know Act, or EPCRA) requires certain suppliers of mixtures or tradename products to notify their customers when such mixtures or tradename products contain chemicals listed in Section 313. This letter constitutes a supplier notification that the following product you ordered contains one or more chemicals on the Section 313 list under zinc compounds (*) as noted below:

Product Name: Sovchem® ZDMC Powder

Chemical Name (*)	CAS #	% Composition
Zinc, bis (dimethylcarbamo-dithioato-s-s')*	137-30-4	> 98 %

* Zinc, bis (dimethylcarbamo-dithioato-s-s') is not specifically listed but falls under the general category of zinc compounds.

In addition, an MSDS for this product is enclosed for your use.

If you are a distributor and you sell this product to another customer (s), you are required under Section 313 to furnish the same information and MSDS to that customer (s).

If you have any questions, please do not hesitate to contact our Technical Department at 330-869-0500.

Sovereign Chemical Company