

Safety Data Sheet

ZDEC

1. IDENTIFICATION OF SUBSTANCE / COMPANY INFORMATION

Chemical Name	Zinc diethyl dithiocarbamate
Synonyms	Accelerator ZDEC, ZDC EZ
CAS #	14324-55-1
Formula	C ₁₀ H ₂₀ N ₂ S ₄ Zn
Chemical Family	Accelerator
Supplier	SunBoss Chemicals Corp.
Address	8-110 West Beaver Creek Road Richmond Hill, ON L4B 1J9
Telephone	905-707-3433
Fax	905-707-7393

Emergency Information After normal hours call Chemtrec at 1-800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS - No</u>	<u>Weight %</u>	<u>UN No.</u>
Zinc Diethyldithiocarbamate	14324-55-1	> 97	238-270-9
White Mineral Oil (powder only)	8042-47-5	1 - 2	232-455-8
	<u>Symbol(s)</u>	<u>Risk Phrase(s)</u>	
	Xi, N	R22, R36/37/38, R43, R50/53	

3. HEALTH HAZARDS INFORMATION

EMERGENCY OVERVIEW

Signal Word: **WARNING!**
COMBUSTIBLE DUST – EXPLOSION POTENTIAL!
Harmful if swallowed!
May cause sensitization by skin contact.
Irritating to eyes, respiratory system and skin.
Very toxic to aquatic organisms and may cause long term adverse effects in the aquatic environment.

Potential Health Effects

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 or gastrointestinal irritation. Illness may occur after a single swallowing of relatively large quantities of this material.
Skin contact	May cause an allergic skin reaction. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.
Eye Contact	Causes mild eye irritation. Signs/symptoms can include redness, swelling, pain, tearing.

4. EMERGENCY FIRST AID PROCEDURES

Inhalation	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.
Ingestion	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.
Skin	Remove contaminated clothing, wash skin with water, using soap if available. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists or signs of toxicity occur.
Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Note to Physician	Provide symptomatic/supportive care as necessary. Exposure by ingestion, inhalation or skin absorption may cause alcohol intolerance (Antabuse Effect).

5. FIRE AND EXPLOSION HAZARD MEASURES

Flammability	Not determined
Flash Point	300°F / 149°C
Flash Point Method	Cleveland Open Cup (COC)
DOT Category	Not regulated
Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.
Auto Ignition Temperature	Not determined
Flammable Limits	Not determined
Special Fire Fighting Procedures	Combustible. Fight fire from a safe distance and from a protected location. Use water spray to cool fire exposed surfaces. Do not allow runoff to enter waterways.
Special Protective Equipment	Fire fighters should wear full protective clothing, including self-contained breathing equipment.
Unusual Fire and Explosion Hazard	Combustible. Combustible dust – explosion potential. Toxic emissions may result if product is involved in a fire.

6. ACCIDENTAL RELEASE MEASURES

Procedures	Wear protective equipment specified. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.
Clean up Methods	Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Scoop up and remove. Do NOT spread spilled product with water.

7. HANDLING AND STORAGE

Handling	Good hygienic practices should be observed. Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded with material. Avoid generating or breathing dust. Avoid contact with eyes, skin and clothing. Close containers of unused product. Wash hands before eating, drinking, and chewing gum, using tobacco or using the toilet. Do not reuse this container.
Storage	Store closed containers in a cool, dry, well-ventilated area. Eliminate ignition sources. Store away from strong oxidizing materials. Avoid exposure to direct sunlight. . Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls	Avoid dust generation. Ensure good ventilation and local exhaustion of the working area as necessary to control any air contaminants to within their exposure limits. 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.
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Exposure Limits

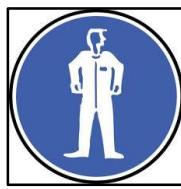
Zinc diethyl dithiocarbamate
White Mineral oil

ACGIH TLV

Not established
5 mg/m³ (TWA)

OSHA TLV

Not established
5 mg/m³ (TWA)



Respiratory	Use approved NIOSH respiratory protection if TVL exceeded or over exposure is likely. Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.
Eyes	Wear safety glasses or goggles to protect against exposure.
Skin	Normal work coveralls. Launder contaminated clothing before reuse.
Gloves	Use gloves as a standard industrial handling procedure. All cleanable impervious glove types are acceptable.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White powder or granules
Odour	Slight
Specific Gravity	1.48 @ 20°C
Density	1.41 g/cm ³
Bulk Density	330-370 kg/m ³ @ 20°C
Solubility in water	INSOLUBLE
pH	Not applicable
Other Solubility	Soluble in 1% NaOH solution, CS ₂ , benzene and chloroform - slightly soluble in alcohol.
Boiling point	Not determined
Melting Point	338°F/170°C
Molecular Weight	361.93
Molecular Formula	C ₁₀ H ₂₀ N ₂ S ₄ 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.
Conditions to avoid	Keep away from heat, sparks and flame. Avoid contact with strong oxidants such as liquid chlorine and concentrated oxygen.
Incompatibility	Strong oxidizing agents. Acids.
Hazardous Polymerization	Will not occur
Hazardous Decomposition Products	Carbon monoxide, Oxides of nitrogen and sulphur, toxic zinc metal fumes.
Additional Guidelines	None

11. TOXICOLOGICAL INFORMATION

Acute oral LD 50 (mg/kg)	3530 mg/kg - Rat
Acute Dermal LD 50 (mg/kg)	>3160 mg/kg - Rabbit
Acute Inhalation LC50 (mg/l)	Not determined
Principle routes of Exposure	Inhalation. Dermal - skin.

Ingestion	May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting or gastrointestinal irritation. Illness may occur after a single swallowing of relatively large quantities of this material.
Skin contact	May cause an allergic skin reaction. May be absorbed through the skin and produce 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.
Eye Contact	Causes mild eye irritation. Signs/symptoms can include redness, swelling, pain, tearing.
Aggravated Conditions	Alcohol consumption problems. Pulmonary disorders. This material or its emissions may cause an allergic reaction or sensitization reaction and thereby aggravate systemic diseases.
Carcinogenicity	Negative in standard tests using bacteria and yeast cells. 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 suspected human carcinogens.
Primary Irritation Effect	Slightly irritating to skin and eyes. Possible sensitizer.
Genotoxicity	Both negative and weak positive results in standard in vitro and in vivo tests using mammalian animals.
Reproductive/Developmental Toxicity	Did not affect reproductive or post-natal development in animal studies. No evidence of teratogenicity in animal studies using rats, mice and hamsters. Embryotoxicity reported in studies conducted on chicken embryos.

12. ECOLOGICAL INFORMATION

Acute Fish Toxicity	96Hr LC50 Rainbow Trout = 0.23 mg/l. 96Hr LC50 Bluegill Sunfish = 0.40 mg/l. 96Hr LC50 Fathead Minnow = 0.26 mg/l.
Acute Crustacean Toxicity	48Hr LC50 Daphnia Magna = 0.44 mg/l.
Octonal/Water Coefficient	Log P = 3.11 (estimated)
Chemical Fate Information	Not determined. Similar compounds show at least moderate biodegradability. Similar compounds show rapid hydrolysis under acidic conditions.
Other Information	Similar compounds show a low potential for bio-accumulation and environmental persistence.

13. DISPOSAL CONSIDERATIONS

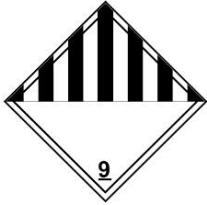
Waste Disposal	This material is a non-hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations.
Contaminated Packaging	If empty container retains product residues, all label precautions must be observed. DO NOT re-use container. Transport with all closures in place. Dispose of container according to national or local regulations.

14. TRANSPORT INFORMATION

DOT

Not Regulated

IATA



UN/IN No.
Proper Shipping Name

3077
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc diethyl dithiocarbamate)

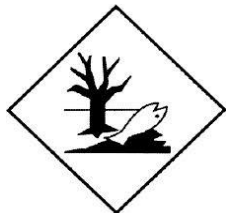
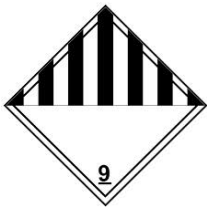
Hazard Class
Packing Group

9
III

Special Markings:
Note:

Symbol (fish and tree)
EFFECTIVE 01/01/2009: Subject to ICAO/IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE marking requirement [IATA 7.1.6.3]

IMDG



UN/IN No.
Proper Shipping Name

3077
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Zinc diethyl dithiocarbamate)

Hazard Class
Packing Group
Marine Pollutant
Special Markings:

9
III
No
Symbol (fish and tree)

TDG (Canada)

See DOT

15. REGULATORY INFORMATION

LABELLING ACCORDING TO DIR 67/548 EEC

EC Number: 232-270-9
Classification based on: TESTS



IRRITANT (Xi)



DANGEROUS FOR THE ENVIRONMENT (N)

CLASSIFIED ACCORDING TO DIRECTIVE 199/45/EC

Risk Phrases: R22 – Harmful if swallowed.
R36/37/38 – Irritating to skin, eyes and respiratory system.
R43– May cause sensitisation by skin contact.
R50/53 – Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Safety Phrases: S24/25 – Avoid contact with skin and eyes.
S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection.
S57 – Use appropriate containment to avoid environmental contamination.
S60 – This material and its container must be disposed of as a hazardous waste.
S61 – Avoid release to the environment. Refer to Special Instructions/Safety Data Sheet.

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

TSCA Listed

Canadian DSL Listed

EINECS/ELINCS Listed

US Regulations

SARA Section 302 None Found
SARA 311/312 Hazard Categories Immediate
SARA 313 Chemical As “Zinc Compounds”, De Minimis concentration =1.0%
RCRA Status Not an RCRA waste.

Canadian Regulations

WHMIS Hazard Class



NPRI

D2A VERY TOXIC MATERIALS/ Materials causing other toxic effects

Listed under the category “Zinc and its Compounds”, NPRI, Part 1, Group 1, ID#231 [Canada]. Minimum concentration to report = 1%

16. HAZARD RATING SYSTEM

NFPA Rating (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	2
FIRE	1
REACTIVITY	0

HMIS Classification (Scale 0-4)

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

HEALTH	2
FIRE	1
REACTIVITY	0

17. OTHER INFORMATION

Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. SunBoss Chemicals Corp. extends no warranty and assumes no responsibility for the accuracy or sufficiency of the content and expressly disclaims all liability for reliance thereon. This material safety data sheet provides guidelines for the safe handling of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. It is the responsibility of the user to comply with all Federal, State and local laws and regulations. Individuals exposed to this product should read and understand this information and be provided pertinent training a prior to working with this product.

18. REVISION DATE

Revision number: 5

Date of Issue: September 24, 2014

Changes: Number and format of headings changed; Updates to Sections 1: Identification of Substance - EC information added; 2: Health Hazards Information; 8: Specific Personal Protection Equipment - pictograms added; 14: Transport information - pictograms added; 15: Regulatory information - EC information added; 16: Hazard Rating System - table added; 17: Abbreviations and Acronyms added