

**WILLING CHEM** Document No: PWCC-MSDS-014

**MSDS for Zinc Diethyldithiocarbamate**

\*\*\*\* SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*

**Product Name:** Accelerator ZDEC  
**Chemical Name:** Zinc Diethyldithiocarbamate,  
**Synonyms:** WILLING ZDEC, ZDC, EZ  
**Company Identification:** Puyang Willing Chemicals Co. LTD.  
Industry and Commercial Model Zone  
Puyang City, Henan, China  
457163

**For other information call:**

00 86 21 3422 5991  
00 86 137 0164 5278

**Contact:** Mr. Kuber Tan

\*\*\*\* SECTION 2 – COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\*

Components/CAS#	Percent
Zinc Diethyldithiocarbamate/14324-55-1	>96.0%

\*\*\*\* SECTION 3 – HAZARDS IDENTIFICATION \*\*\*\*

**Hazard Information Emergency Overview:** WARNING! Combustible dust - explosion potential. This material is irritating to skin, eyes and respiratory tract. May cause alcohol intolerance. May cause allergic skin reaction.

**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. Illness may occur after a single swallowing of relatively large quantities of this material.

\*\*\*\* SECTION 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.

**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)

#### \*\*\*\* SECTION 5 – FIRE FIGHTING MEASURES \*\*\*\*

**Flash Point (°F/C):** >300 °F / > 149°C

**Flash Point Method:** Cleveland Open Cup (COC)

**Autoignition Temp. (°F/C):** Not Determined

**Lower Explosion Limit in Air (LEL):** Not Determined.

**Upper Explosion Limit in Air (UEL):** Not determined.

**Extinguishing Media:** Water fog, carbon dioxide, foam, dry chemical

**Special Exposure Hazards:** 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:** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**Unusual Fire/Explosion Hazards:** Combustible. Combustible dust - explosion potential. Toxic emissions may result if product is involved in a fire.

#### \*\*\*\* SECTION 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. Do NOT spread spilled product with water.

**CERCLA Reportable Quantity (RQ):** Not Applicable

#### \*\*\*\* SECTION 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.

**\*\*\*\* SECTION 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.

**Respiratory Protection:** Use in a well ventilated area. Use approved NIOSH respiratory protection if TLV exceeded..... Or over exposure 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. 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:** Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m<sup>3</sup> (Total Dust). OSHA PEL/8-Hr TWA = 05 mg/m<sup>3</sup> (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m<sup>3</sup>. White Mineral Oil OSHA PEL/8-Hr TWA = 5mg/m<sup>3</sup> ACGIH TLV/8-Hr TWA = 5mg/m<sup>3</sup>

**\*\*\*\* SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\***

**Appearance:** White to off-white powder Granules

**Odor:** SLIGHT

**pH:** Not Applicable.

**Specific Gravity:** 1.48 @20°C

**Density:** 1.5

**Bulk Density:** 330-370 kg/m<sup>3</sup> @20°C

**Melting Point (°F/C):** 338°F / 170°C

**Boiling Point (°F/C):** Not Determined

**Vapor Pressure:** Negligible @ 20°C

**Vapor Density (Air=1):** Not Applicable.

**% Volatile by Volume:** <0.5% by weight

**Solubility in Water:** INSOLUBLE

**Other Solubility:** Soluble in Benzene Carbon Disulfide Organic liquids, including fats and oils  
Acetone

**Viscosity:** Not Applicable.

**Molecular Weight:** 361.93

**Molecular Formula:** C<sub>10</sub>-H<sub>20</sub>-N<sub>2</sub>-S<sub>4</sub>-Zn

Other Data

**Loss on Drying:** 0.30% Max.

Zn Content : 17.0-19.0%.

\*\*\*\* SECTION 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.

**Hazardous Decomposition Products:** Carbon monoxide Oxides of nitrogen Oxides of sulfur  
Toxic zinc metal fumes

**Additional Guidelines:** Not Applicable

\*\*\*\* SECTION 11 – TOXICOLOGICAL INFORMATION \*\*\*\*

**Target Organs Acute Oral LD50 (mg/kg):** 3530 mg/kg (Rat)

**Acute Dermal LD50 (mg/kg):** >3160 mg/kg (Rabbit)

**Acute Inhalation LC50 (mg/l):** Not Determined.

**Principle Routes of Exposure:** Dermal - skin. Inhalation.

**Ingestion:** May cause alcohol intolerance (Antabuse Effect) May cause headache, dizziness, nausea, vomiting, 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 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

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

**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:** Decomposition products and fumes from vulcanization and cross-linking may cause eye, skin and respiratory sensitization. May be a skin sensitizer.

**Primary Irritation Effect:** Slightly irritating to skin and eyes. Possible sensitizer.

**Carcinogenicity:** Negative in standard tests using bacteria and yeast cells.

**Genotoxicity:** Both negative and weak positive results in standard in vitro and in vivo tests using mammalian cells.

**Reproductive/Developmental Toxicity:**

Did not affect reproductive performance or post-natal development in animal studies. No evidence of teratogenicity in animal studies using rats, mice and/or hamsters. Embryotoxicity reported in studies conducted on chicken embryos.

**\*\*\*\* SECTION 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 Crustaceans Toxicity:** 48Hr EC50 Daphnia Magna: 0.44 mg/l

**Acute Algae Toxicity:** Not determined

**Octanol/Water Coefficient:** Not determined. 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 bioaccumulation and environmental persistence.

**\*\*\*\* SECTION 13 – DISPOSAL CONSIDERATIONS \*\*\*\***

**Disposal of Waste Method:** This product, if disposed as received, is a non-hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Federal, state and local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected.

**Contaminated Packaging:** If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or dispose according to national or local regulations. Do NOT reuse container. Dispose of container according to national or local regulations.

**\*\*\*\* SECTION 14 – TRANSPORT INFORMATION \*\*\*\***

**Land transport (ADR/ RID)**

**ADR class 9**

**RID class 9**

**ADR/RID packing group III**

**Hazard Identification No. 90**

**Substance Identification No. 3077**

**UN number 3077**

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc diethyldithiocarbamate)

**Sea transport (IMDG-code/ IMO)**

**IMO/IMDG code** Class 9

**Packing group III**

**UN number 3077**

**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s. (Zinc diethyldithiocarbamate)

**Air transport (ICAO-TI/ IATA-DGR)**

**ICAO-TI/IATA-DGR UN number 3077**

**Class 9 Packing group III**

**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s. (zinc diethylcarbamate)

**\*\*\*\* SECTION 15 – REGULATORY INFORMATION \*\*\*\***

**Worldwide Inventory Status TSCA (USA):** Listed  
**Canadian DSL:** Listed  
**Canadian NDSL:** N/A  
**EINECS/ELINCS (Europe):** Listed  
**Japanese Inventory (ENCS):** Listed  
**Korean Chemical Inventory (ECL):** Listed  
**Australian Chemical Inventories(AICS):** Listed  
**New Zealand (NZ):** Listed  
**Phillipines (PICCS) Inventory:** Not determined  
**China (CLECS):** None Identified.  
**US Regulatory Rules**  
**SARA Section 302:** Not Applicable  
**SARA 311/312 Hazard Categories:** Immediate  
**SARA 313 Chemical:** As "Zinc Compounds".  
**RCRA Status:** Not a RCRA waste.  
**Other Regulations:**  
**California Proposition 65:** NONE  
**New Jersey Right-to-Know List:** N/A  
**Pennsylvania Right to Know List:** N/A  
**Florida Right to Know:** N/A  
**Minnesota Right to Know:** N/A  
**MA Right to Know Law:** N/A  
**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.  
**Canadian Regulations WHMIS Hazard Class:** D2B TOXIC MATERIALS / Materials Causing Other Toxic Effects  
**NPRI:** N/A

**\*\*\*\* SECTION 16 – ADDITIONAL INFORMATION \*\*\*\***

**MSDS Creation Date: 2/1/2003 Revision #0 Date: Original.**

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