

Safety Data Sheet



Revision Date: 2016-08-22

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

RB ZD 8

Product Name RB ZD 8
Product Description Zinc Dithiophosphate 8
Product Use Lubricant oil additive
Supplier RB Products Inc.
 740 Bradfield Road
 Houston TX 77060
 Phone: 1 (281) 992-3500
 Fax: (281) 992-7525

EMERGENCY INFORMATION

Transportation Emergency Phone (703) 527-3887 (CHEMTREC)
Product Technical Information (281) 992-3500
Website <http://www.rbproductsinc.com>
Other product information sales@rbproductsinc.com

SECTION 2: HAZARDS IDENTIFICATION

CLASSIFICATION

Serious eye damage, Category 1; H318 Causes serious eye damage.
Chronic aquatic toxicant, Category 2; H411 Toxic to aquatic life with long lasting effects

Signal Word: Danger

PICTOGRAM



Health Hazards: Causes serious eye damage.
Environmental Hazards: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Prevention: Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.
Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician. Collect spillage.
Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.
HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Safety Data Sheet



Revision Date: 2016-08-22

COMPONENTS	CAS NUMBER	AMOUNT
Zinc alkyl dithiophosphate	68649-42-3	95 %weight
Highly refined mineral oil (C15 - C50)	Mixture	5 %weight

Note that the chemical identity of some or all of the above components is considered confidential business information and is being withheld as permitted by 29 CFR 1910.1200 and various State Right-To-Know Laws.

SECTION 4: FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention. **Skin:** Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

If exposure to hydrogen sulfide (H₂S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

IMMEDIATE SYMPTOMS AND HEALTH EFFECTS

Eye: Contact with the eyes causes permanent damage, including blindness. Symptoms may include pain, tearing, reddening, swelling and impaired vision.

Skin: Repeated contact with the skin may cause irritation. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Not expected to be harmful if swallowed.

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. This material may decompose and release hydrogen sulfide gas (H₂S) when heated above 100°C (212°F) or stored at temperatures above 80°C (176°F) for more than

5 days. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H₂S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DELAYED OR OTHER SYMPTOMS AND HEALTH EFFECTS: Risk depends on duration and level of exposure. See Section 11 for additional information.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Note to Physicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas.

SECTION 5: FIREFIGHTING MEASURES

Safety Data Sheet



Revision Date: 2016-08-22

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Zinc, Sulfur, Phosphorus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

Reporting: Report spills to local authorities as appropriate or required.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONARY MEASURES: Do not get in eyes, on skin, or on clothing. Do not breathe vapor or fumes. Do not breathe gas. If adequate engineering controls are used, short term activities such as loading, unloading and in-line blending may occur at temperatures ranging from 80-85°C (176-185°F). During shipment by railcar or tank truck, loading temperatures as high as 80-85°C (176-185°F) may be used and are expected to drop to 66°C (150°F) or lower within 7 days. Storage temperatures for up to 2 weeks should not exceed 66°C (150°F). The recommended long-term (2 weeks or more) storage temperature is ambient to 45°C (113°F) maximum. Proper handling and storage temperatures for this material are time and temperature dependent and are necessary to avoid decomposition that releases hazardous fumes described in Section 2/11 (Potential Health Effects/Toxicological Information) and Section 10 (Stability and Reactivity). Wash thoroughly after handling.

UNUSUAL HANDLING HAZARDS: Toxic quantities of hydrogen sulfide (H₂S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H₂S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H₂S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H₂S, the concentration should be measured by the use of fixed or portable devices.

GENERAL HANDLING INFORMATION: The recommended reheating medium is hot water or regulated low pressure steam. Care must be taken not to exceed the temperatures stated above when reheating this material in order to avoid decomposition that releases hazardous fumes. Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

STATIC HAZARD: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

CONTAINER WARNINGS: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous.

Safety Data Sheet



Revision Date: 2016-08-22

Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

GENERAL CONSIDERATIONS: Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS: Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.

Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Nitrile Rubber, Silver Shield, Viton. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate to prevent skin contact.

Respiratory Protection: No respiratory protection is normally required.

If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an approved positive pressure air-supplying respirator. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Zinc alkyl dithiophosphate	Not Applicable	--	--	--	--
Highly refined mineral oil (C15 -C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 -C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Amber	Physical State: Liquid
Odor: Petroleum odor	Odor Threshold: No data available
pH: Not Applicable	Vapor Pressure: 0.0001 torr (Estimated) @ 20 °C (68 °F)
Vapor Density (Air = 1): No data available	Initial Boiling Point: No data available
Solubility: Insoluble in water	Freezing Point: No data available
Melting Point: No data available	Specific Gravity: 1.10 @ 15.6°C (60°F) (Estimated)
Density: 1.10 kg/l @ 15°C (59°F)	Viscosity: 325 cSt @ 40°C (104°F) Minimum
Coefficient of Therm. Expansion / °F: 0.0004	Evaporation Rate: No data available
Decomposition temperature: No Data Available	Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:

Safety Data Sheet



Revision Date: 2016-08-22

Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 130 °C (266 °F) Minimum

Auto ignition: No data available

Flammability (Explosive) Limits (% by volume in air): Lower: No data available; Upper: No data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: This material is not expected to react.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Conditions to Avoid: Do not exceed handling and storage temperatures listed in MSDS Section 7 (Handling and Storage).

Hazardous Decomposition Products: Hydrogen Sulfide (See Section 7), Alkyl Mercaptans (See Section 7)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials. The eye irritation hazard is based on corneal opacity persisting for more than 21 days.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials. The repeated-dose skin irritation hazard is based on data for a similar product.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials. This material did not cause skin sensitization reactions in a Buehler guinea pig test.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: This product gave negative results in the following mutagenicity assays:

<Microbial/Microsome Reverse Mutation Assay (Ames Test)> <In Vivo Mouse Micronucleus Test>

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from products of a similar structure and composition.

MOBILITY: No data available.

Safety Data Sheet



Revision Date: 2016-08-22

PERSISTENCE AND DEGRADABILITY: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from products of a similar structure and composition.

POTENTIAL TO BIOACCUMULATE: Bioconcentration Factor: No data available. Octanol/Water Partition Coefficient: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14: TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC ALKYL DITHIOPHOSPHATE), 9, III, MARINE POLLUTANT; (Non-bulk packages do not require marine pollutant provisions for road, rail, air transport, 49 CFR §171.4(c))

IMO/IMDG Shipping Description: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC ALKYL DITHIOPHOSPHATE), 9, III, MARINE POLLUTANT

ICAO/IATA Shipping Description: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC ALKYL DITHIOPHOSPHATE), 9, III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable.

SECTION 15: REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1. Immediate (Acute) Health Effects:	YES
	2. Delayed (Chronic) Health Effects:	NO
	3. Fire Hazard:	NO
	4. Sudden Release of Pressure Hazard:	NO
	5. Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated. Zinc alkyl dithiophosphate
03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines),

Safety Data Sheet



Revision Date: 2016-08-22

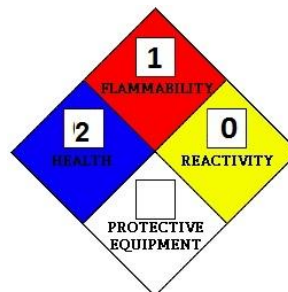
TSCA (United States).

SECTION 16: OTHER INFORMATION

Hazardous Materials Information System (USA)

Health Hazard	3
Fire Hazard	1
Reactivity Hazard	0

National Fire Protection Association (USA)



The information in this SDS pertains only to the product as shipped.

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 3 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *-Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Notice: This Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product. This Safety Data Sheet conforms to the requirements of ANS1 Z400 1.