

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)
Product name	Zerex™ RADIATOR SUPER PROTECTOR & WATER PUMP LUBRICANT	
Product code	ZXC04	

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Appearance: liquid

DANGER! MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. REDUCES BLOOD'S OXYGEN-CARRYING CAPACITY. MAY BE HARMFUL IF SWALLOWED. CAUSES SEVERE BURNS OF THE EYES AND SKIN.

#### Potential Health Effects

##### **Exposure routes**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

##### **Eye contact**

Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness.

##### **Skin contact**

Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage.

##### **Ingestion**

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury.

### **Inhalation**

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

### **Aggravated Medical Condition**

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, lung (for example, asthma-like conditions), Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias., Individuals with preexisting kidney disorders are more susceptible to hyperkalemia from overexposure to potassium compounds.

### **Symptoms**

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Cough, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), Lowered blood pressure, Lack of coordination, Difficulty in breathing, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), methemoglobinemia (blood abnormality which causes a blue coloring to the skin), Convulsions

### **Target Organs**

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: thyroid effects

### **Carcinogenicity**

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

### **Reproductive hazard**

Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

### Other information

This product contains nitrite or nitrate which may react with secondary and tertiary amines to form nitrosamines. Certain nitrosamines have been shown to cause cancer in laboratory animals.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
SODIUM NITRATE	7631-99-4	>=1.5-<5%
DIPOTASSIUM PHOSPHATE	7758-11-4	>=1.5-<5%
SODIUM MERCAPTOBENZOTHAZOLE	2492-26-4	>=1-<1.5%

## 4. FIRST AID MEASURES

### Eyes

If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

### Skin

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

### Ingestion

Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

### Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

### Notes to physician

**Hazards:** Overexposure to this product (or a component) may cause methemoglobinemia, which in sufficient concentration causes cyanosis. Severe cyanosis may require intravenous injection of methylene blue. Methylene blue is contraindicated if the patient has confirmed or suspected glucose-6-phosphate dehydrogenase deficiency. Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.

**Treatment:** No information available.

## 5. FIREFIGHTING MEASURES

### Suitable extinguishing media

Dry chemical, Carbon dioxide (CO<sub>2</sub>), Water spray

### Hazardous combustion products

carbon dioxide and carbon monoxide, nitrogen oxides (NO<sub>x</sub>), Oxides of phosphorus, potassium oxide, sulfur oxides

### Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

### NFPA Flammable and Combustible Liquids Classification

not applicable

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

### Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

### Methods for cleaning up

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

### Other information

Comply with all applicable federal, state, and local regulations.

## 7. HANDLING AND STORAGE

### Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

### Storage

Store in a cool, dry, ventilated area.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Contains no substances with occupational exposure limit values.

### General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

### Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects. Mechanical ventilation systems used to ventilate corrosive storage or process areas must be designed with components that are corrosion resistant.

### Eye protection

Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist. Maintain eye wash station in immediate work area.

### Skin and body protection

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

Wear resistant gloves such as:

Neoprene

Wear appropriate chemical impervious clothing and boots whenever there is potential for skin contact with product. Launder clothing before reuse. Maintain safety shower at all locations where skin contact could occur. Contact your local safety equipment supplier to assist the facility in determining proper selection of personal protective equipment for the applications/operations present at your facility.

Discard gloves that show tears, pinholes, or signs of wear.

### Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	liquid
<b>Boiling point/boiling range</b>	212 °F / 100 °C @ 1,013.33 hPa Calculated Phase Transition Liquid/Gas
<b>Flash point</b>	not applicable
<b>Vapour pressure</b>	32.000 hPa @ 77 °F / 25 °C Calculated Vapor Pressure
<b>Density</b>	1.036 g/cm <sup>3</sup> @ 60.00 °F / 15.56 °C
	8.636 lb/gal @ 60.00 °F / 15.56 °C
<b>Water solubility</b>	completely soluble

## 10. STABILITY AND REACTIVITY

### Stability

Stable.

### Conditions to avoid

excessive heat

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

### Incompatible products

Heavy metals, Powdered metals, Reducing agents, Strong acids, Strong oxidizing agents

### Hazardous decomposition products

May form:, carbon dioxide and carbon monoxide, nitrogen oxides (NOx), Oxides of phosphorus, potassium oxide, Sulphur oxides

### Hazardous reactions

Product will not undergo hazardous polymerization. Product will not undergo hazardous polymerization.

## 11. TOXICOLOGICAL INFORMATION

### Acute oral toxicity

Acute oral toxicity - : no data available  
Product

### Acute oral toxicity - Components

SODIUM NITRATE : LD 50: 1,267 mg/kg Species: Rat

DIPOTASSIUM : LD50: > 2,000 mg/kg Species: Rat, female  
PHOSPHATE

SODIUM : LD 50: 5,200 mg/kg Species: Rat  
MERCAPTOBENZOTHI  
AZOLE

### Acute inhalation toxicity

Acute inhalation toxicity - : no data available  
Product

### Acute inhalation toxicity - Components

SODIUM : LC 50: > 6.5 mg/l Exposure time: 4 h Species: Rat  
MERCAPTOBENZOTHI  
AZOLE

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

### Acute dermal toxicity

Acute dermal toxicity - Product : no data available

### Acute dermal toxicity - Components

DIPOTASSIUM PHOSPHATE : LD 50: > 5,000 mg/kg Species: Rabbit Method: OECD Test Guideline 402

SODIUM MERCAPTOBENZOTHI AZOLE : LD 50: > 5,010 mg/kg Species: Rabbit

### Acute toxicity (other routes of administration)

Acute toxicity (other routes of administration) : no data available

## 12. ECOLOGICAL INFORMATION

### Biodegradability

Biodegradability - Product : no data available

### Bioaccumulation

Bioaccumulation - Product : no data available

### Ecotoxicity effects

#### Toxicity to fish

Toxicity to fish - Product : no data available

#### Toxicity to fish - Components

SODIUM NITRATE : LC 50: 1,355 - 2,063 mg/l  
Exposure time: 96 h  
Species: Rainbow trout,donaldson trout (Oncorhynchus mykiss)  
Method: Static  
Remarks: Mortality



Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

SODIUM MERCAPTOBENZOTHI AZOLE	: LC 50: 3.8 mg/l Exposure time: 96 h Species: Bluegill ( <i>Lepomis macrochirus</i> )
	LC 50: 4.2 mg/l Exposure time: 96 h Species: Pimephales promelas (fathead minnow) Method: OECD Test Guideline 203 Test Type: static test
	LC 50: 0.75 mg/l Exposure time: 96 h Species: <i>Oncorhynchus mykiss</i> (rainbow trout) Test Type: static test
	LC 50: 1.5 mg/l Exposure time: 96 h Species: Bluegill ( <i>Lepomis macrochirus</i> ) Test Type: static test

### Toxicity to daphnia and other aquatic invertebrates

Toxicity to daphnia and other aquatic invertebrates - Product	: no data available
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### Toxicity to daphnia and other aquatic invertebrates - Components

SODIUM NITRATE	: LC 50: 3,581 mg/l Exposure time: 48 h Species: Water flea ( <i>Daphnia magna</i> ) Method: Static Remarks: Mortality
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SODIUM MERCAPTOBENZOTHI AZOLE	: EC 50: 19 mg/l Exposure time: 48 h Species: Water flea ( <i>Daphnia magna</i> ) Method: OECD Test Guideline 202
	EC 50: 2.9 mg/l Exposure time: 48 h Species: Water flea ( <i>Daphnia magna</i> )

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

### Toxicity to algae

Toxicity to algae - Product : no data available

### Toxicity to algae - Components

SODIUM MERCAPTOBENZOTHI AZOLE	: IC50: 0.3 mg/l Exposure time: 96 h Species: Pseudokirchneriella subcapitata (green algae) Method: OECD Test Guideline 201
	EC50: 0.4 mg/l Exposure time: 96 h Species: Green algae (Selenastrum capricornutum)

### Toxicity to bacteria

Toxicity to bacteria - Product : no data available

## 13. DISPOSAL CONSIDERATIONS

### Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

## 14. TRANSPORT INFORMATION

### REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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### U.S. DOT - ROAD

Not dangerous goods

### U.S. DOT - RAIL

Not dangerous goods

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

**U.S. DOT - INLAND WATERWAYS**

Not dangerous goods

**TRANSPORT CANADA - ROAD**

Not dangerous goods

**TRANSPORT CANADA - RAIL**

Not dangerous goods

**TRANSPORT CANADA - INLAND WATERWAYS**

Not dangerous goods

**INTERNATIONAL MARITIME DANGEROUS GOODS**

Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO**

Not dangerous goods

**INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER**

Not dangerous goods

**MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES**

Not dangerous goods

\*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

**15. REGULATORY INFORMATION****California Prop. 65**

Proposition 65 warnings are not required for this product based on the results of a risk assessment.

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

**SARA Hazard Classification**

**SARA 311/312 Classification**

Acute Health Hazard

**SARA 313 Component(s)**

SODIUM NITRATE	2.04 %
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**New Jersey RTK Label Information**

WATER	7732-18-5
SODIUM NITRATE	7631-99-4
DIPOTASSIUM PHOSPHATE	7758-11-4
SODIUM MERCAPTOBENZOTHAZOLE	2492-26-4

**Pennsylvania RTK Label Information**

WATER	7732-18-5
SODIUM NITRATE	7631-99-4

**Notification status**

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	y (positive listing)
Japan. Kashin-Hou Law List	n (Negative listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

	HMIS	NFPA
Health	3	3
Flammability	1	1
Physical hazards	0	
Instability		0

Zerex™ RADIATOR SUPER PROTECTOR &  
WATER PUMP LUBRICANT  
ZXC04

Specific Hazard	--	--
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### 16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).