

*Committed to Service and innovation*

**MATERIAL SAFETY DATA SHEET**

**MSDS # PMC/RC/010/06**

**Updated on** 02-Jan-2006  
**Product Name** ACCICURE ZDC  
**Revision Number** +REV04  
**UN Number** 3077  
**CAS No.** 14324 - 55 - 1

<b>Health Hazard :</b>	<b>2</b>
<b>Fire Hazard :</b>	<b>1</b>
<b>Reactivity :</b>	<b>0</b>
<b>Personal Protection :</b>	<b>X</b>

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING**

**PRODUCT NAME :** ACCICURE ZDC

Address/Phone No : PMC Rubber Chemicals India Private Limited  
Works & Registered Office:  
103 G T Road West  
PO: Rishra 712248, Dist : Hooghly  
West Bengal, India  
Tel : +91 33 26722515, Fax : +91 33 26721552

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

**PRODUCT DESCRIPTION** ZDC : Zinc diethyldithiocarbamate ; diethyl dithiocarbamic acid, zinc salt

<b>HAZARDOUS INGREDIENT(S)</b>	<b>CAS No.</b>	<b>Symbol</b>	<b>R Phrases</b>
Zinc diethyl dithiocarbamate	14324-55-1	Xn,N	R22, 36/37/38, R43/50/53

**3. HAZARDS IDENTIFICATION**

Harmful if swallowed or inhaled  
May cause irritation to eyes and skin.

Exposure may cause adverse reaction after alcohol consumption (Antabuse effect)  
Some clinical evidence of skin sensitisation has been reported but few problems have been reported in use See: **OTHER INFORMATION**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

In common with many organic compounds in powder form it can produce flammable dust clouds in air.

#### **4. FIRST-AID MEASURES**

Inhalation	Remove patient from exposure, keep warm and at rest. Obtain medical attention if ill effects occur.
Skin Contact	Remove contaminated clothing. Wash immediately with large quantity of soap and water. If symptoms (irritation or blistering) occur obtain medical attention. Contaminated clothing should be laundered before re-use.
Eye Contact	Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Obtain medical attention.
Ingestion	Do not induce vomiting. Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain immediate medical attention.

##### **Further Medical Treatment**

Symptomatic treatment and supportive therapy as indicated.

#### **5. FIRE-FIGHTING MEASURES**

Combustible.

In common with many organic compounds in powder form it can produce flammable dust clouds in air. Take precautionary measures against static discharges.

Combustion or thermal decomposition will evolve very toxic, irritant and extremely flammable vapours. Combustion products carbon monoxide, carbon dioxide, nitrogen oxides and sulphur oxides.

Extinguishing Media : water spray, foam, dry powder or CO<sub>2</sub>. Do not use water jet. (Avoid dust generation.)

Fire Fighting & Protective Equipment : A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

## **6. ACCIDENTAL RELEASE MEASURES**

Do not allow to enter drains, sewers or watercourses. Use appropriate containment to avoid environmental contamination.  
Control dust formation. (See 'Fire fighting measures'.)  
Collect spillages by mechanical means. Transfer to a container for disposal or recovery.  
Ensure suitable personal protection during removal of spillages.  
Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body

## **7. HANDLING AND STORAGE**

### **7.1 HANDLING**

Control dust formation. (See 'Fire fighting measures'.)  
Avoid contact with skin and eyes.  
Avoid inhalation of high concentrations of dusts.  
Atmospheric concentrations should be minimised and kept as low as reasonably practicable. See Exposure Limits

### **7.2 STORAGE**

In common with many organic compounds in powder form it can produce flammable dust clouds in air. Take precautionary measures against static discharges.  
Keep away from oxidising agents, acids, alkalis, moisture, heat and direct sunlight.  
Use appropriate containment to avoid environmental contamination.  
Suitable containers : High density polyethylene (HDPE) laminated paper bags with polythene liner inside.

Storage Temperature	:	ambient.
Storage Life	:	1 year(s)

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Wear suitable gloves and eye/face protection.  
Wear suitable respiratory protective equipment if exposure to high levels of dust are likely.

## Occupational Exposure Limits

No occupational exposure limit listed but 2.5 mg/m<sup>3</sup> for total dust is recommended maximum

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Powder, non-staining
Colour	White
Odour	Almost odourless
pH (Value)	Not applicable.
Boiling Point (Deg C)	No data.
Melting Point (Deg C)	178 approx
Flash Point (Deg C)	No data.
Flammable Limits	No data.
Auto Ignition	
Temperature (Deg C)	No data.
Explosive Properties	In common with many organic compounds in powder form it can produce flammable dust clouds in air.
Oxidising Properties	Not applicable.
Density (g/ml)	No data.
Solubility (Water)	Insoluble
Solubility (Other)	No data.
Partition Coefficient	No data.
Specific Gravity	1.47
Molecular Weight	361.93
Molecular Formula	C10-H20-N2-S4-Zn

## 10. STABILITY AND REACTIVITY

Stable under normal conditions.  
Incompatible materials oxidising agents, acids and alkalis.

Hazardous Decomposition Product(s) See ' Fire fighting measures' .

## 11. TOXICOLOGICAL INFORMATION

Inhalation	Irritating to respiratory system. Combustion or thermal decomposition will evolve very toxic and irritant vapours.
Skin Contact	Irritating to skin.

*Committed to Service and innovation*

May cause sensitisation by skin contact.

See: **OTHER INFORMATION**

Eye Contact Irritating to eyes.

Moderate irritant to rabbit eyes.

Ingestion Harmful if swallowed.

Acute Oral LD50 (Rat) 3500mg/kg

Acute Dermal LD50 (Rabbit) >3500mg/kg

Long Term Exposure

Repeated exposure of animals to high levels produces adverse effects on the liver and blood. Studies in animals have shown that repeated doses produce no adverse reproductive effects.

See: **OTHER INFORMATION**

## 12. ECOLOGICAL INFORMATION

Acute Fish Toxicity 96 hr LC50 Rainbow Trout – 0.25 mg/l  
96 hr LC50 Bluegill Sunfish – 0.40 mg/l

Acute Algae Toxicity No data

Octanol/Water Coefficient Log P = 3.1 (estimated)

Chemical fate Information Bioconcentration Factor – 100

Environmental Fate and Distribution Solid with low volatility.

## 13. DISPOSAL CONSIDERATIONS

This material and/or its container must be disposed of as hazardous waste. Disposal should be in accordance with local, state or national legislation.

## 14. TRANSPORT INFORMATION

Not Classified as Dangerous for Transport.

UN No. 3077

UN Pack. Group III

### SEA

IMDG Class -primary 9

Marine Pollutant Classified as a Marine Pollutant

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.(zinc diethyl dithiocarbamate)

**ROAD/RAIL**

ADR/RID Class 9  
ADR/RID Item No 12(c)

**15. REGULATORY INFORMATION**

EC Classification Harmful, Hazard Symbol Xn



Dangerous for the environment, N



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

Safety Phrases S24 Avoid contact with skin.  
S25 Avoid contact with the eyes.  
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S36 Wear suitable protective clothing.  
S37/39 Wear suitable gloves and eye/face protection  
S57 Use appropriate containment to avoid environmental contamination.  
S60 This material and/or its container must be disposed of as hazardous waste.  
S61 Avoid release to the environment. Refer to special instructions/Safety data sheet.

**16. OTHER INFORMATION**

Use : Accelerator

**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.

**Special notes:**

1. Users are referred to NT/S Report PB - 223 - 159 on the basis of which NIOSH-RTECS classifies it as a carcinogenic and equivocal tumourigenic agent by RTECS criteria.
2. To minimise the possibility of generating nitrosamines having carcinogenic potential, this compound should not be used in combination with nitrosating agents.
3. Listed by the International Contact Dermatitis Group for routine skin patch testing in appropriate circumstances<sup>2</sup>.
4. Zinc difhiocarbamates were potent embryo toxins in chick eggs at doses of 1 to 10 nmole per egg<sup>1</sup>.

**References:**

1. Korhonen, A., Kemminki, K., Vainio, H., Embryotoxicity of industrial chemicals on the chick embryo: dithiocarbamates, Teratog. Carcinog. Mutagen. 1983; 3: 163-75.
2. Kaniwa, M., et al. Identification of causative chemicals of allergic contact dermatitis using a combination of patch testing in patients and chemical analysis. Application to cases from rubber gloves. Contact Dermatitis, 1994; 31: 65-71.

HMIS rating: Health: 2  
Flammability: 1  
Reactivity: 0  
PPI: X

Legend : 0(HMIS) Minimal hazard  
1(HMIS) Slight hazard  
2(HMIS) Moderate hazard  
3(HMIS) Serious hazard  
4(HMIS) Severe hazard  
X(HMIS) Personal protective rating to be supplied by user depending on the use conditions

Information in this publication is believed to be accurate and is given in good faith, but it is for the Customer to satisfy itself of the suitability for its own particular purpose. Accordingly, PMC Group Rubber Chemicals gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent of such exclusion is prevented by law. The trade mark "ACCICURE" is registered in the name of ICI India Limited and assigned to : PMC Rubber Chemicals India Private Limited.