

Committed to Service and innovation

MATERIAL SAFETY DATA SHEET

MSDS # PMC/RC/011/06

Updated on 02-Jan-2006
Product Name ACCICURE ZDBC
Revision Number +REV04
UN Number 3077
CAS No. 136-23-2

Health Hazard :	1
Fire Hazard :	1
Reactivity :	0
Personal Protection :	X

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

PRODUCT NAME : ACCICURE ZDBC

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 ZDBC; Zinc dibutyl dithiocarbamate

HAZARDOUS INGREDIENT(S)	CAS No.	Symbol	R Phrases
Zinc dibutyl dithiocarbamate	136-23-2	N, Xi	R36, R37, R38 R43, R50, R53

3. HAZARDS IDENTIFICATION

Emergency Overview: Warning ! In common with many organic compounds in powder form it can produce flammable dust clouds in air. Combustible dust – explosion potential.

Eye contact: Causes mild eye irritation, symptoms may include redness, swelling, pain & tearing.
Skin Contact: May cause an allergic skin reaction. May cause skin defatting with prolonged exposure.
Inhalation: May cause irritation of the respiratory tract & alcohol intolerance

Committed to Service and innovation

Ingestion: May cause alcohol intolerance (Antabuse Effect). May cause headache, nausea, vomiting & gastrointestinal irritation.

See: **OTHER INFORMATION**

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

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

Flash Point : 108°C/227°F (TCC)

Autoignition Temp : 400°C/752°F

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 CO₂. 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

Eye Protection: Wear suitable gloves and eye/face protection.
Skin Protection: Wear PPE. Launder contaminated clothing before reuse.

Committed to Service and innovation

Respiratory Protection: Wear suitable respiratory protective equipment if exposure to high levels of dust are likely. Use adequate ventilation to keep dust concentrations below acceptable exposure limits.

Occupational Exposure Limits

No occupational exposure limit listed but 2.5 mg/m³ for total dust is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Powder, non-staining
Colour	White
Odour	Slight
pH (Value)	Not applicable.
Boiling Point (Deg C)	296
Melting Point (Deg C)	100 (approx)
Flash Point (Deg C)	108 (TCC)
Flammable Limits	No data.
Auto Ignition Temp (°C)	400
Explosive Properties	In common with many organic compounds in powder form it can produce flammable dust clouds in air.
Oxidising Properties	Not applicable.
Bulk Density	310-350 kg/m ³
Solubility (Water)	0.01 mg/l @25°C
Solubility (Other)	Soluble in chloroform
Partition Coefficient	Log P=7.04 (Octanol/Water)
Specific Gravity @ 25°C	1.25 (typical)
Molecular Weight	474.13
Molecular Formula	C18-H36-N2-S4-Zn

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions of handling, use & transportation.

Hazardous Polymerisation: Will not occur

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

Conditions to avoid : Keep away from heat, sparks & flame.

Avoid contact with strong oxidants, acids and alkalis.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD50 (Rat)	>5000 mg/kg
Acute Dermal LD50 (Rabbit)	>2000 mg/kg
Principle Routes of Exposure	Dermal- skin, Inhalation
Ingestion	Harmful if swallowed. May cause alcohol intolerance (Antabuse Effect). May cause headache, nausea, vomiting & gastrointestinal irritation.
Inhalation	Irritating to respiratory system. May cause alcohol intolerance. Combustion or thermal decomposition will evolve very toxic and irritant vapours.
Skin Contact	May cause skin irritation. May cause sensitisation by skin contact.
Eye Contact	See: OTHER INFORMATION May cause eye irritation. Symptoms may include redness, swelling, pain & tearing. Moderate irritant to rabbit eyes.
Aggravated Conditions:	Antabuse Effect. Pulmonary disorder & systemic diseases.
Carcinogenicity	Negative in standard tests using bacteria and yeast cells. See: OTHER INFORMATION
Genotoxicity	Negative in vitro/vivo tests
Reproductive/Developmental Toxicity:	Embryotoxicity reported in studies on chicken embryos. Studies in animals have shown that repeated doses produce no adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Acute Fish Toxicity	96 hr LC50 Rainbow Trout : 520 mg/l 96 hr LC50 Bluegill Sunfish : 880 mg/l
Acute Crustaceans	48 hr EC50 Daphnia Magna : 0.74 mg/l
Acute Algae Toxicity	No data

Committed to Service and innovation

Octanol/Water Coefficient: Log P = 7.05(estimated)

Chemical fate Information: NA. Similar compounds show rapid hydrolysis under acidic conditions.

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 Not regulated

Marine Pollutant No

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

ROAD/RAIL

ADR/RID Class 9

ADR/RID Item No 12(c)

15. REGULATORY INFORMATION

EC Classification Irritant, Hazard Symbol Xi



Dangerous for the environment, N



Risk Phrases R36 Irritating to eyes.
R37 Irritating to respiratory system.
R38 irritating to skin.
R43 May cause sensitisation by skin contact.
R50 Very toxic to aquatic organisms.
R53 May cause long-term adverse effects in aquatic Environment.

Safety Phrases S24 Avoid contact with skin.
S25 Avoid contact with the eyes.

Committed to Service and innovation

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 circumstances².

References:

1. 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: 1
Flammability: 1
Reactivity: 0
PPI: X

Legend : 0(HMIS) Minimal hazard
1(HMIS) Slight hazard

Committed to Service and innovation

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.