

Product: **Ekaland ZDBC C**

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SDS No.: 100045-100 (Version 1.0)

Date 22.07.2015

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

1.1. Identification of the product

Identification of the mixture: Ekaland ZDBC C

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Curing chemical

1.3. Details of the supplier of the safety data sheet

Supplier MLPC International
209, avenue Charles Despiau
F-40370 RION-LES-LANDES
Tel. + 33 (0) 5 58 57 02 00
http://www.mlpc-intl.com
fds@mlpc-intl.com

E-mail address

1.4. Emergency telephone number

+44 (0) 1235 239 670 (Carechem24 – MLPC 29003) **Europe**
001866 928 0789 (Carechem24 – MLPC 29003) **Americas**
+65 3158 1074 (Carechem24 – MLPC 29003) **Asia-pacific region** (excluding China)
+86 400 6267911 **China mainland**

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008):

Skin irritation, 2, H315
Eye irritation, 2, H319
Skin sensitisation, 1, H317
Specific target organ toxicity - single exposure, 3, Respiratory system, H335
Acute aquatic toxicity, 1, H400
Chronic aquatic toxicity, 1, H410

M-Factor: Acute = 1
Chronic = 10

Additional information:

For the full text of the H, EUH-phrases mentioned in this Section, see Section 16.

2.2. Label elements

Label elements (REGULATION (EC) No 1272/2008):

Hazardous components which must be listed on the label:

zinc bis(dibutyl)dithiocarbamate)

Hazard pictograms:



Signal word:

Warning

Hazard statements:

H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.
H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

P273 : Avoid release to the environment.
P280 : Wear protective gloves.

Response:

P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 : If eye irritation persists: Get medical advice/ attention.
P362 + P364 : Take off contaminated clothing and wash it before reuse.

Storage:

P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.

2.3. **Other hazards** : None.

Other:

Results of PBT and vPvB assessment : According to REACH regulation, annex XIII, the substance does not meet PBT and vPvB criteria.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. **Mixtures**

Chemical nature of the mixture¹:

Hazardous components (accordance with Annex II of Regulation (EC) No 1907/2006 and its amendment(s)) :

Chemical Name ¹ & REACH Registration Number ²	EC-No.	CAS-No.	Concentration	Classification REGULATION (EC) No 1272/2008
Zinc bis(dibutylidithiocarbamate) (01-2119535161-51) (N° ANNEX: 006-081-00-9)	205-232-8	136-23-2	98 %	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor Acute = 1 M-Factor Chronic = 10

¹: See chapter 14 for Proper Shipping Name

²: See the text of the regulation for applicable exceptions or provisions : The transition time according to REACH Regulation, Article 23, is still not expired.

For the full text of the H, EUH-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. **Description of necessary first-aid measures:**

General advice:

Take off immediately all contaminated clothing.

Inhalation:

Move to fresh air. Oxygen or artificial respiration if needed. Consult a physician.

Skin contact:

Wash off immediately with soap and plenty of water.

Eye contact:

Wash well-open eyes immediately, abundantly and thoroughly with water. Consult an ophthalmologist immediately.

Ingestion:

If swallowed, do not induce vomiting - seek medical advice.

Protection of first-aiders:

In case of insufficient ventilation, wear suitable respiratory equipment.

4.2. **Most important symptoms/effects, acute and delayed:** No data available.

4.3. **Indication of immediate medical attention and special treatment needed, if necessary:** No data available.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Water spray, Foam, Dry powder

Unsuitable extinguishing media: All other extinguishants

5.2. Special hazards arising from the substance or mixture:

Thermal decomposition gives :

5.3. Advice for firefighters:

Specific methods:

Remove all sources of ignition. Suppress gases, fumes and/or dust with water spray jet.

Special protective actions for fire-fighters:

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

Avoid contact with skin and eyes and inhalation of dust.

6.2. Environmental precautions:

Do not let product enter drains. Do not contaminate surface water.

6.3. Methods and materials for containment and cleaning up:

Recovery:

Shovel or sweep up. Recover the product and place in a dry labelled container.

Elimination:

Destroy the product by incineration (in accordance with local and national regulations).

6.4. Reference to other sections: None.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling:

Technical measures/Precautions:

Storage and handling precautions applicable to products: Dust forming. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Provide water supplies, ocular fountains and showers near the point of use.

Hygiene measures:

General industrial hygiene practice. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities:

Keep in a well-ventilated place. Keep in a dry place. Store protected from moisture.

Incompatible products:

Strong acids, Oxidizing agents

Packaging material:

Recommended: Paper bags, Big bags.

7.3. **Specific end use(s):** None.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Exposure Limit Values Not relevant

Derived No Effect Level (DNEL):

End Use	Inhalation	Ingestion	Skin contact
Workers	6 mg/m ³ (LT, SE)		800 mg/kg (LT, SE)
Consumers	2 mg/m ³ (LT, SE)	1 mg/kg (LT, SE)	480 mg/kg (LT, SE)

LE : Local effects, **SE** : Systemic effects, **LT** : Long term, **ST** : Short term

Predicted No Effect Concentration:

Compartment:	Value:
Water (Intermittent release)	0,0074 mg/l
Effects on waste water treatment plants	0,00365 mg/l
Fresh water sediment	11,5 mg/kg
Marine sediment	1,15 mg/kg
Soil	2,3 mg/kg
Oral (Secondary Poisoning)	4,56 mg/kg food

8.2. Exposure controls:

General protective measures: Ensure sufficient air exchange and/or exhaust in work areas

Personal protective equipment:

Respiratory protection: Effective dust mask
Hand protection: Impervious gloves
Eye/face protection: Tightly fitting safety goggles
Skin and body protection: At the workplace : Protective suit.

Environmental exposure controls: See chapter 6

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:

Physical state (20°C): solid
Form: powder
Colour: Whitish.
Odour: odourless
Olfactory threshold: Not relevant
pH: Concentration 0,001 g/l, Temperature 20 °C, pH 5,9 - 6,4
Melting point : 100 - 112 °C (Pressure 1.013 hPa) Active ingredient (OECD Test Guideline 102)
Boiling temperature : 318 °C (Pressure 1.013 hPa) Pure substance (A2 Method (D. 92/69/ECC))
Flash point: Not relevant
Evaporation rate: No data available.
Flammability (solid, gas):
Flammability: Non flammable product (Flammability (solids))
Vapour pressure: < 0,0001 Pa , at 20 °C Active ingredient (A4 Method (D. 92/69/ECC))
Vapour density: No data available.
Density: 1.250 g/cm³ Molten form
Bulk density: 500 kg/m³ , at 20 °C
Water solubility: < 0,1 mg/l at 25 °C (OECD Test Guideline 105)
Partition coefficient: n-octanol/water: log Kow : 7,04 (calculated)
Auto-ignition temperature: No data available.

Decomposition temperature: No data available.
Viscosity: No data available.
Explosive properties:
Explosivity: Active ingredient, Not explosive (A14 Method)
Oxidizing properties: The substance or mixture is not classified as oxidizing. (Oxidizing properties (solids))

9.2. Other data:

Solubility in other solvents: Soluble in: Benzene , Chloroform
partly soluble Hexane
Surface tension: approximately 70,8 mN/m Active ingredient (OECD Test Guideline 115)
pKA: None.
Molecular weight: 474 g/mol (Literature)

10. STABILITY AND REACTIVITY

10.1. Reactivity: No data available.

10.2. Chemical stability:
Product stable in the absence of moisture

10.3. Possibility of hazardous reactions: No data available.

10.4. Conditions to avoid:
Store protected from moisture and heat. Protect from light. Keep away from direct sunlight.

10.5. Incompatible materials to avoid: No data available.

10.6. Hazardous decomposition products:
Thermal decomposition gives :, Carbon oxides, Sulphur oxides, Nitrogen oxides (NOx)
Thermal decomposition gives :, Carbon oxides, Sulphur oxides, Nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

Acute toxicity:

Inhalation: No data available.
Ingestion: **Slightly harmful by ingestion**
• In animals : No mortality/Rat: 5.000 mg/kg (Method: OECD Test Guideline 401)
Dermal: **Slightly harmful in contact with skin**
• In animals : No mortality/Rabbit: 2.000 mg/kg (Method: OECD Test Guideline 402)

Local effects (Corrosion / Irritation / Serious eye damage):

Skin contact: **Irritating to skin.**
• In animals : Mild skin irritation (Draize Test, Rabbit)
Eye contact: **Irritating to eyes.**
• In animals : Mild eye irritation (Draize Test, Rabbit)

Respiratory or skin sensitisation:

Inhalation: No data available.
Skin contact: **Strong skin sensitizer**

- In animals : Strong sensitizing effects by skin contact. (Method: OECD Test Guideline 406 Guinea pig maximization test)

CMR effects :

Mutagenicity: Results from tests do not lead to considering the product as genotoxic

In vitro

Ames test: Inactive (Method: OECD Test Guideline 471)
In vitro gene mutations test on mammalian cells: Inactive (Method: OECD Test Guideline 476)
In vitro chromosomal abnormality test on human lymphocytes: Some negative tests, Some positive tests (Method: OECD Test Guideline 473)

In vivo

Micronucleus test in vivo mouse: Inactive (Method: OECD Test Guideline 474)
DNA repair test on rats hepatocytes: Inactive

Carcinogenicity: Based on the available data, the substance is not suspected of having carcinogenic potential
• In animals : According to limited available data, Absence of carcinogenic effects (Mouse, dietary administration)

Reproductive toxicity:

Fertility:

According to available experimental data:
Through analogy with a comparable product :

- In animals : Two generations study.
NOAEL (Parental toxicity) : 25 mg/kg bw/day
NOAEL (Fertility) : 10 mg/kg bw/day
(Method: OECD Test Guideline 416, Rat, By diet)

Foetal development:

Based on the available data, the substance is not suspected of having developmental toxicity potential.

- In animals : Through analogy with a comparable product :
Exposure during pregnancy: Absence of toxic effects for foetal development
NOAEL (Developmental Toxicity) : 1.250 mg/kg bw/day
NOAEL (Maternal Toxicity) : 125 mg/kg bw/day
(Rat, By oral route)

Specific target organ toxicity :

Single exposure :

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Exposure routes : Inhalation
Target Organs : Respiratory system

Inhalation:

Irritating to respiratory system.

Repeated exposure:

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

- In animals : By diet: No specific toxic effects
NOAEL= 41 mg/kg (Rat, 48 Days)

Aspiration hazard: Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicology Assessment: All available data on this product and/or the components quoted in section 3 and/or the analogue substances/metabolites have been taken into account for the hazard assessment.

Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

12.1. Toxicity :

Fish: **No effect up to the limit of solubility**
LC50, 96 h (Poecilia reticulata) (Method: OECD Test Guideline 203) No effect up to the limit of solubility

Aquatic invertebrates: **Very toxic to daphnia.**
EC50, 48 h (Daphnia magna (Water flea)) : 0,74 mg/l (Method: US EPA, Immobilization)

Aquatic plants: **Toxic to algae.**
Through analogy with a comparable product :
EC50, 96 h (Chlorella pyrenoidosa (aglae)) : 1,1 mg/l (Method: OECD Test Guideline 201, growth rate inhibition)

Microorganisms:
EC50, 3 h : 1.428 mg/l (Method: OECD Test Guideline 209)
EC10 : 166 mg/l

Aquatic toxicity / Long term toxicity:

Aquatic invertebrates: Through analogy with a comparable product :
NOEC, 21 d (Daphnia magna (Water flea)) : 0,0032 mg/l (Method: OECD Test Guideline 211)

M-Factor: Acute = 1
Chronic = 10

12.2. Persistence and degradability :

In water: **Rapid hydrolysis**

Stability in water: Through analogy with a comparable product :

Half-life: 0,2 h at 25 °C and pH 5
Half-life: 17,7 h at 25 °C and pH 7
Half-life: 6,3 d at 25 °C and pH 9

Biodegradation (In water): **Not readily biodegradable.**
2 % after 28 d (Method: OECD Test Guideline 301 F)

12.3. Bioaccumulative potential :

Bioaccumulation: **Potentially bioaccumulable.**
Partition coefficient: n-octanol/water: log Kow : 7,04 (Method: calculated)

12.4. Mobility in soil - Distribution among environmental compartments:

Surface tension: approximately 70,8 mN/m Active ingredient, (Method: OECD Test Guideline 115)

12.5. Results of PBT and vPvB assessment :

According to REACH regulation, annex XIII, the substance does not meet PBT and vPvB criteria.

12.6. Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment:

- Disposal of product:** Destroy the product by incineration (in accordance with local and national regulations).
- Disposal of packaging:** Destroy packaging by incineration at an approved waste disposal site (in accordance with local and national regulations).

14. TRANSPORT INFORMATION

Regulation	14.1. UN number	14.2. UN proper shipping name	14.3. Class*	Label	14.4. PG*	14.5. Environmental hazards	14.6. Special precautions for user
ADR	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(ZINC DIBUTYLDITHIOCARBAMATE)	9	9	III	yes	
ADN	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC DIBUTYLDITHIOCARBAMATE)	9	9	III	yes	
RID	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC DIBUTYLDITHIOCARBAMATE)	9	9	III	yes	
IATA Cargo	3077	Environmentally hazardous substance, solid, n.o.s. (Zinc dibutyldithiocarbamate)	9	9MI	III	yes	
IATA Passenger	3077	Environmentally hazardous substance, solid, n.o.s. (Zinc dibutyldithiocarbamate)	9	9MI	III	yes	
IMDG	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZINC DIBUTYLDITHIOCARBAMATE)	9	9	III	Marine pollutant	EmS Number: F-A, S-F Mark: MP

*Description: 14.3. Transport hazard class(es)
14.4. Packing group

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

15. REGULATORY INFORMATION

Safety data sheets: accordance with Annex II of Regulation (EC) No 1907/2006 and its amendment(s)

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:

15.2. Chemical Safety Assessment: None.

16. OTHER INFORMATION

Full text of H, EUH-phrases referred to under sections 2 and 3

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Thesaurus:

NOAEL : No Observed Adverse Effect Level (NOAEL)
LOAEL : Lowest Observed Adverse Effect Level (LOAEL)
bw : Body weight
food : oral feed
dw : Dry weight
vPvB : very Persistent and very Bioaccumulative
PBT : Persistent, Bioaccumulative and Toxic

This information applies to the PRODUCT AS SUCH and conforming to specifications of ARKEMA. In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear. The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes. The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive. It is the responsibility of the person receiving the product to refer to the totality of

the official documents concerning the use, the possession and the handling of the product. It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.

NB: In this document the numerical separator of the thousands is the "." (point), the decimal separator is "," (comma).
