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

1.1. Identification of the product

Identification of the mixture: Ekaland ZBEC 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-DES-LANDES
FRANCE
Tel. + 33 (0) 5 58 57 02 00
http://www.mlpc-intl.com
fds@mlpc-intl.com

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):
Chronic aquatic toxicity, 1, H410
M-Factor: Chronic = 1

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(dibenzyldithiocarbamate)

Hazard pictograms:

Signal word: **Warning**

Hazard statements:
H410 : Very toxic to aquatic life with long lasting effects.

Precautionary statements:
Disposal:
P501 : Dispose of contents/ container to an approved incineration plant.

2.3. Other hazards : None.

Other:
Results of PBT and vPvB assessment : Based on the available information, it is not possible to conclude on the hasard potential of this mixture.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Chemical nature of the mixture[1]:

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(dibenzyldithiocarbamate) (01-2119543708-31)	238-778-0	14726-36-4	96 - 98%	Aquatic Chronic 1; H410 M-Factor Chronic = 1

[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. Consult a physician.

Skin contact:
Wash off immediately with plenty of water. If significant contact: Consult a physician.

Eye contact:
Rinse immediately with plenty of water for at least 15 minutes. If irritation persists, consult an ophthalmologist.

Ingestion:
Consult a doctor quickly.

Protection of first-aiders:
For any intervention, wear appropriate breathing apparatus.

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 :, Hydrogen cyanide (hydrocyanic acid)

5.3. Advice for firefighters:

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

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:

Methods for cleaning up:
Shovel or sweep up. Pick up and transfer to properly labelled containers.

Recovery:
Recover the product and place in a waterproof 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.

Safe handling advice:
Provide for appropriate exhaust ventilation and dust collection at machinery. Provide showers, eye-baths. Wear self-contained breathing apparatus and protective suit.

Hygiene measures:
Follow general hygiene guidelines. Avoid contact with the skin and the eyes. 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:
Store protected from moisture. Store protected from all ignition sources.

Incompatible products:
Strong acids, Oxidizing agents

Packaging material:
Recommended: Paper bags, Paper bags lined with polyethylene, Polypropylene big bags

7.3. Specific end use(s): None.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Exposure Limit Values

Distillates (petroleum), hydrotreated light paraffinic

Source	Date	Value type	Value (ppm)	Value (mg/m3)	Remarks
EU SCOELS	2014	TWA	–	5	8 hours Inhalable
EU SCOELS	2014		–	–	Inhalable Listed
ACGIH (US)	02 2012		–	–	Exposure by all routes should be carefully controlled to levels as low as possible.
ACGIH (US)	02 2012		–	–	Included in the regulation but with no data values. See regulation for further details.

Derived No Effect Level (DNEL): No data available.

Predicted No Effect Concentration: No data available.

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: Gloves
Eye/face protection: Tightly fitting safety goggles
Skin and body protection: At the workplace / Intervention at incident : Appropriate protective clothing.

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:	white
Odour:	organic
Olfactory threshold:	not determined
pH:	not determined
Melting point/range :	>= 180 °C (OECD Test Guideline 102)
Boiling temperature :	330 °C (Pressure 1.013 hPa) (A2 Method (D. 92/69/ECC))
Flash point:	Not relevant
Evaporation rate:	No data available.
Flammability (solid, gas):	
Flammability:	Non flammable product (Method A10: Flammability (solids))
Vapour pressure:	negligible
Vapour density:	No data available.
Density:	1,42 g/cm3 , at 20 °C Molten form (Literature)
Bulk density:	210 - 250 kg/m3 , at 20 °C
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	None.
Viscosity:	No data available.
Explosive properties:	
Explosivity:	Not relevant (due to the chemical structure)
Oxidizing properties:	Not relevant (due to the chemical structure)

9.2. Other data:

Solubility in other solvents:	Acetone
Molecular weight:	610 g/mol

10. STABILITY AND REACTIVITY

10.1. Reactivity: No data available.

10.2. Chemical stability: No data available.

10.3. Possibility of hazardous reactions: No data available.

10.4. Conditions to avoid:
Exposure to moisture Remove all sources of ignition.

10.5. Incompatible materials to avoid:
Strong acids, Oxidizing agents

10.6. Hazardous decomposition products:

Thermal decomposition:
None.

Thermal decomposition giving toxic products:, Hydrogen cyanide (hydrocyanic acid)

11. TOXICOLOGICAL INFORMATION

All available and relevant 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.

11.1. Information on toxicological effects:

Acute toxicity:

Inhalation: **Based on the available information, it is not possible to conclude on the hasard potential of this mixture.**

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : No mortality/4 h/Rat: 5,53 mg/l (Method: OECD Test Guideline 403) (Aerosol)

Ingestion: **According to its composition, can be considered as : Slightly or not harmful by ingestion**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
May be considered as comparable to a similar product for which experimental results are:

ZINC BIS(DIBUTYLDITHIOCARBAMATE) :

• In animals : No mortality/Rat: 5.000 mg/kg (Method: OECD Test Guideline 401)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : No mortality/Rat: 5.000 mg/kg (Method: OECD Test Guideline 401)

Dermal: **According to its composition, can be considered as : Slightly or not harmful in contact with skin**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
May be considered as comparable to a similar product for which experimental results are:

ZINC BIS(DIBUTYLDITHIOCARBAMATE) :

• In animals : No mortality/Rabbit: 2.000 mg/kg (Method: OECD Test Guideline 402)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : No mortality/Rabbit: 5.000 mg/kg (Method: OECD Test Guideline 402)

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

Skin contact: **According to its composition, can be considered as : Non irritating to skin**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
• In animals : No skin irritation (OECD Test Guideline 404, Rabbit)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : Slightly irritating to skin. (Rabbit, Exposure time: 24 h)

Eye contact: **According to its composition, can be considered as : Not irritating to the eyes.**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
• In animals : No eye irritation (OECD Test Guideline 405, Rabbit)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : No eye irritation (OECD Test Guideline 405, Rabbit)

Respiratory or skin sensitisation:

Inhalation: No data available.

Skin contact: **According to its composition, can be considered as : Not a skin sensitizer**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
• In animals : No skin allergy was observed (Method : OECD Test Guideline 429 LLNA: Local Lymph Node Assay)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : Not a skin sensitizer (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

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
Ames test in vitro: Inactive (Method: OECD Test Guideline 471)
In vitro mammalian cell gene mutation test: Active (Method: OECD Test Guideline 476)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
Ames test in vitro: Inactive (Method: OECD Test Guideline 471)
In vitro test for chromosomal abnormalities on CHO cells: Inactive (Method: OECD Test Guideline 473)
In vitro gene mutations test on mammalian cells: Inactive (Method: OECD Test Guideline 476)

In vivo

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
May be considered as comparable to a similar product for which experimental results are:

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

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
Micronucleus test in vivo mouse: Inactive (Method: OECD Test Guideline 474)

Carcinogenicity: **Based on the available information, it is not possible to conclude on the hasard potential of this mixture.**

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : Absence of carcinogenic effects (Method: OECD Test Guideline 451, mice, Chronic, dermal route)

Reproductive toxicity:

Fertility: **Based on the available data, the substance is not suspected of having reprotoxic potential.**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
May be considered as comparable to a similar product for which experimental results are:

ZINC BIS(DIBUTYLDITHIOCARBAMATE) :
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)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : Reproduction Test: No toxicity to reproduction
NOAEL (Parental toxicity): 1.000 mg/kg bw/day
NOAEL (Fertility): 1.000 mg/kg bw/day
(Method: OECD Test Guideline 421, Rat, By oral route)

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

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
May be considered as comparable to a similar product for which experimental results are:

ZINC BIS(DIBUTYLDITHIOCARBAMATE) :
Through analogy with a comparable product :
• In animals : 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)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : Absence of toxic effects for foetal development.
NOAEL (Developmental Toxicity): 2.000 mg/kg bw/day
NOAEL (Maternal Toxicity): < 125 mg/kg bw/day
(Method: OECD Test Guideline 414, Rat, dermal route)

Specific target organ toxicity :

Single exposure : No data available.

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

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
May be considered as comparable to a similar product for which experimental results are:

ZINC BIS(DIBUTYLDITHIOCARBAMATE) :

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

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
• In animals : By inhalation: No effect is reported.
NOAEL= > 1 mg/l (Rat, 4 Weeks) (Aerosol)
dermal route: No effect is reported.
NOAEL= > 2.000 mg/kg (Method: OECD Test Guideline 411, Rat, 3 months)
By oral route: (Results obtained on a similar product).
Target organs: Reproductive organs, Stomach, Liver, Thymus, NOAEL= < 125 mg/kg (Method: OECD Test Guideline 408, Rat, 3 months)

Aspiration hazard: Not relevant

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.

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

12.1. Toxicity :

Fish: **No effect up to the limit of solubility**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
LC50, 96 h (Poecilia reticulata (guppy)) (Method: OECD Test Guideline 203) No effect up to the limit of solubility

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
LL50, 96 h (Pimephales promelas (fathead minnow)) : > 100 mg/l (Method: OECD Test Guideline 203)

Aquatic invertebrates: **No effect up to the limit of solubility**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
EC50, 48 h (Daphnia magna (Water flea)) : 0,74 mg/l (Method: OECD Test Guideline 202, Immobilization) Through analogy with a comparable product :

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
LL50, 48 h (Daphnia magna (Water flea)) : > 10.000 mg/l (Method: OECD Test Guideline 202, pH: 7,7, Immobilization)

Aquatic plants: **No effect up to the limit of solubility**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
EC50, 96 h (Chlorella vulgaris (Fresh water algae)) : 1,1 mg/l (Method: OECD Test Guideline 203, growth rate inhibition) Through analogy with a comparable product :

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
LL50, 72 h (Pseudokirchneriella subcapitata (microalgae)) : > 100 mg/l (Method: OECD Test Guideline 201, growth rate inhibition)

Microorganisms:

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
EC10, 3 h (Activated sludge) : > 1.000 mg/l (Method: OECD Test Guideline 209, Respiration inhibition)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
NOEC, 4 d (Photobacterium phosphoreum) : > 1,93 mg/l (Method: DIN 38412)

Aquatic toxicity / Long term toxicity:

Aquatic invertebrates:

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
NOEC, 21 d (Daphnia magna (Water flea)) : 3,2 µg/l (Method: OECD Test Guideline 211, Growth inhibition/Reproduction inhibition)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
NOEC, 21 d (Daphnia magna (Water flea)) : 10 mg/l (Method: OECD Test Guideline 211, Growth inhibition/Reproduction inhibition)

Aquatic plants:

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
NOEC r, 72 h (Pseudokirchneriella subcapitata) : 100 mg/l (Method: OECD Test Guideline 201, growth rate inhibition)

M-Factor: Chronic = 1

12.2. Persistence and degradability :

In water: **Hydrolyses on contact with water.**

Stability in water:

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
Through analogy with a comparable product :
Half-life: 10 min (at 25 °C and pH 4)
Method: OECD Test Guideline 111
Through analogy with a comparable product :
Half-life: 17,7 h (at 25 °C and pH 7)
Method: OECD Test Guideline 111
Through analogy with a comparable product :
Half-life: 6,3 d (at 25 °C and pH 9)
Method: OECD Test Guideline 111

Biodegradation (In water): **Not readily biodegradable.**

ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
Not readily biodegradable.
5 % after 28 d (Method: OECD Test Guideline 301F)

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC :
Not readily biodegradable.
Not readily biodegradable.: 4 % after 28 d (Method: OECD Test Guideline 301 B)

12.3. Bioaccumulative potential :

Bioaccumulation: **There is no data available for this product.**

12.4. Mobility in soil - Distribution among environmental compartments:

Absorption / desorption:
ZINC BIS(DIBENZYLDITHIOCARBAMATE) :
log Koc: 9,4 (Method: calculated)

12.5. Results of PBT and vPvB assessment :

Based on the available information, it is not possible to conclude on the hasard potential of this mixture.

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 bis(dibenzyldithiocarbamate))	9	9	III	yes	
ADN	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	9	9	III	yes	
RID	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc bis(dibenzyldithiocarbamate))	9	9	III	yes	
IATA Cargo	3077	Environmentally hazardous substance, solid, n.o.s. (Zinc bis(dibenzyldithiocarbamate))	9	9MI	III	yes	
IATA Passenger	3077	Environmentally hazardous substance, solid, n.o.s. (Zinc bis(dibenzyldithiocarbamate))	9	9MI	III	yes	
IMDG	3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc bis(dibenzyldithiocarbamate))	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:

Listed in:

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC): Distillates (petroleum), hydrotreated light paraffinic; Baseoil -- unspecified

15.2. Chemical safety assessment: None.

INVENTORIES:

EINECS:	Does not conform
TSCA:	Conforms to
AICS:	Does not conform
DSL:	All components of this product are on the Canadian DSL
ENCS (JP):	Does not conform
KECI (KR):	Does not conform
PICCS (PH):	Conforms to
IECSC (CN):	Does not conform
NZIOC:	Conforms to

16. OTHER INFORMATION

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

H410 Very toxic to aquatic life with long lasting effects.

Update:

Safety datasheet sections which have been updated:		Type:
	Chemical name	Revisions

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).