

**MATERIAL SAFETY DATA SHEET:** According to EC-directive 2001/58/EC**Rubber Accelerator ZDEC (EZ)****HS Code: 38121000.00****1. 化学品及企业标示(CHEMICAL PRODUCT AND COMPANY IDENTIFICATION)**

产品标签名/ Product label name

二乙基二硫代氨基甲酸锌

Zinc diethyl dithiocarbamate

深圳市华起达实业有限责任公司

Meyors Chemical INC Limited

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产品用途/ Intended use

橡胶硫化促进剂/ Rubber Vulcanization accelerator

**2. 成分/组成信息(COMPOSITION/INFORMATION ON INGREDIENTS)**

化学名/ Chemical name

二乙基二硫代氨基甲酸锌/ Zinc diethyl dithiocarbamate

CAS 编号/ CAS NO.

14324-55-1

产品描述/ Chemical description

白色粉末/ white powder

TSCA NO.编码/ TSCA NO.

无/ none

EINECS 号码/ EINECS NO.

无/ none

其他信息/ Other information

C<sub>10</sub>H<sub>20</sub>N<sub>2</sub>S<sub>4</sub>Zn**3. 危险性鉴定(HAZARDS IDENTIFICATION)**

3.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation:H400,H410.



GHS09 Environment

Aquatic Acute 1

Aquatic Chronic 2

GHS07

Acute Tox.4



Skin Irrit. 2

Eyes Irrit. 2

Skin Sens. 1

STOT SE 3

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xn; Sensitizing  
R42/43:

May cause sensitization by inhalation and skin contact.



Xi; Irritant  
R36/37/38:

Irritating to eyes, respiratory system and skin.



N; Dangerous for the  
environment.  
R50/53

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

Information concerning particular hazards for human and environment: Not applicable.

### 3.2 Label elements

Labeling according to Regulation (EC) No 1272/2008

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation:  
H400.

The substance is classified and labeled according to the CLP regulation.

Hazard pictograms



This pictogram only applicable for EU regulations. Not for use in the United States (OSHA GHS)



GHS07



GHS09

Signal word: Warning

Hazard-determining components of labeling: zinc bis (diethyldithiocarbamate)

Hazard statements

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation:H400

H302 Harmful if swallowed

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H410 Very Toxic to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves and eye protection.

P273 Avoid release to the environment.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if



present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P362 Take off contaminated clothing and wash before reuse

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P363 Wash contaminated clothing before reuse.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P391 Collect spillage.

P405 Store locked up.

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

P501 Dispose of contents/container in accordance with local/regional/national/international regulations

Additional information: Contains zinc bis (zinc bis (diethyldithiocarbamate) ). May produce an allergic reaction.

Hazard description

WHMIS-symbols



D2B –Very toxic material causing other toxic effects

NFPA ratings (scale 0-4)



Health = 2

Fire = 1

Reactivity = 0

HMIS ratings (scale 0-4)

HEALTH	2
FIRE	1
REACTIVITY	0

Health = 2

Fire = 1

Reactivity = 0

HMIS Long Term Health Hazard Substances: Substance is not listed.

3.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

#### 4. 急救措施(FIRST AID MEASURES)

症状和效果/ Symptoms and effects

Dust may be irritating to the respiratory tract and cause symptoms of bronchitis.

Repeated contact may cause skin sensitization.

粉尘可能吸入呼吸道，从而导致支气管炎。

经常接触可能导致皮肤过敏。

急救/ First aid

通常情况/ General

In all cases of doubt, or when symptoms persist, seek medical attention.



任何可疑情况，或有任何症状出现，请马上找医生咨询。

**吸入/ Inhalation**

Move to fresh air. If symptoms persist, seek medical advice.

呼吸新鲜空气。如果有持续症状，请马上就医。

Remove all contaminated clothing immediately. Wash off with plenty of soap and water.

**皮肤/ Skin**

Seek medical advice if irritation develops. Launder clothes before reuse.

立即移走所有被污染的衣物。用肥皂和清水冲洗。

如果出现愤怒、烦躁症状请立即就医。衣物重新使用前需洗涤干净。

Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to

**眼睛/ Eye**

Ensure thorough rinsing. Seek medical advice if irritation develops.

翻开眼睑用清水冲洗干净。

确保洗除残渣。如果出现愤怒症状请就医。

**摄取/ Ingestion**

Rinse mouth, give water to drink.

请漱口，喝水。

**医生建议/ Advice to physician**

No specific recommendations.

无详细建议。

**5. 消防措施(FIRE-FIGHTING MEASURES)****灭火媒介/ Extinguishing media**

waterspray, water mist, foam, dry chemical powder, CO<sub>2</sub>  
喷物，水雾，泡沫，干粉灭火器，CO<sub>2</sub>

**不适用的灭火媒介**

None known

**/ Unsuitable extinguishing media**

不知

**特殊的接触危害**

Emits toxic fumes under fire conditions.

**Special exposure hazards**

在火灾条件下释放有毒烟雾。

**分解腐烂危险/燃烧产品/**

Carbon monoxide (CO), Sulfur oxides (SO<sub>x</sub>), nitrous gases  
(NO<sub>x</sub>).

**Hazardous decomposition/****combustion products**

一氧化碳，硫的氧化物，氮的氧化物。

**保护设备/ Protective equipment**

Wear self contained breathing apparatus.

需配戴空气呼吸器。

Do not allow run-off from fire fighting to enter drains or  
water courses.

**其他信息/ Other information**

避免消防水接触下水道，土地或水源。

**6. 泄露应急处理(ACCIDENTAL RELEASE MEASURES)****个人防范/ Personal precautions**

For personal protection see Section 8. Avoid dust  
generation.

对于个人防范请参照第 8 部分。避免粉尘的产生。

**环境预防/ Environmental precautions**

Avoid discharge into the environment.

避免流入环境之中。

**清洁处理方法/ Methods for cleaning up**

Collect as much as possible in a clean container for  
(preferable) reuse or disposal.

尽可能的将其收集在清洁的容器里以便回收或集中处理。

**7. 操作处置与储存(HANDLING AND STORAGE)**



### 操作处置/ Handling

Avoid contact with skin. Avoid dust generation.  
The usual precautions for handling chemicals should be observed.

避免接触皮肤。避免产生粉尘。  
应遵守处理化学品的通常预防措施。

### 储存要求/ Storage requirements

Store in a dry and cool place.  
储存于干燥与阴凉的地方。

## 8. 接触控制/个体防护(EXPOSURE CONTROLS/PERSONAL PROTECTION)

### 工程学控制/ Engineering controls

Avoid dust generation. Ensure good ventilation and local exhaustion of the working area.  
避免粉尘产生。确保当地工作场所通风。

### 暴露极限/Exposure limits

名称/Name 二乙基二硫代氨基甲酸锌/Zinc diethyl dithiocarbamate

OES-TWA 5.0 mg/m<sup>3</sup>

### 个体防护/ Personal protection

#### 呼吸器/ Respiratory

Avoid breathing dust. In case of insufficient ventilation, wear suitable respiratory equipment.  
避免吸入粉尘。在通风不畅的情况下请佩戴相应的呼吸器。

#### 手/ Hand

Wear suitable gloves.  
佩戴相应的长手套。

#### 眼/ Eye

Wear safety goggles.  
佩戴防护眼罩。

#### 皮肤和身体/ Skin and body

Wear suitable protective clothing.  
穿戴相应的保护服装。

## 9. 物理和化学特性(PHYSICAL AND CHEMICAL PROPERTIES)

外观/ Appearance	White powder 白色粉末	颜色/ Colour	White 白色
气味/ Odour	---	沸点/ Boiling point	---
熔点/Melting point $\geq$	172°C	闪点/ Flash point	-
易燃性/ Flammability	---	爆炸极限/ Explosion limits	---
爆炸性/ Explosive properties	---	自燃温度/ Auto ignition temperature	380°C
氧化性/ Oxidizing properties	---	蒸汽压/Vapour pressure	---
比重/ Density	1.41 g/cm <sup>3</sup> (20°C)	体积密度/ Bulk density	---
溶解性/ Solubility in water	Insoluble in water 不溶于水	在其它溶剂中的溶解性 Solubility in other solvents	CS <sub>2</sub> , benzene CS <sub>2</sub> , 苯
PH 值/ pH value	---	分解系数/ Partition coefficient	-



<b>Residues (150um)% Max</b>	0.10 (Max)	<b>相对蒸汽密度/ (air=1)</b>	---
筛余物		<b>Relative vapour density</b>	
<b>粘性/ Viscosity</b>	---	<b>纯度/Assay content % <math>\geq</math></b>	95
油含量/Oil Content %	1.0-2.0		

**10. 稳定性和反应性(STABILITY AND REACTIVITY)**

<b>稳定性/ Stability</b>	Stable under recommended storage and handling conditions (see section 7). 推荐的稳定储存和搬运条件 (请参照第 7 部分)
<b>应避免的情况/ Conditions to avoid</b>	Heating > 100 °C: May catch fire. 加热 > 100° C: 可能着火。
<b>应避免的物质/ Materials to avoid</b>	No specific recommendations. 没特别要求。
<b>腐烂分解毒害性产品/ Hazardous decomposition products</b>	Thermal decomposition products: carbon monoxide (CO), nitrous gases (NOx), Sulfur oxides (SOx). 热分解产物: 一氧化碳 (CO), 亚硝气 (NOx), 硫氧化物 (SOx)。

**11. 毒理学资料(TOXICOLOGICAL INFORMATION)**

<b>名称/ Name</b>	二乙基二硫代氨基甲酸锌/ Zinc diethyl dithiocarbamate
<b>敏感性毒害/ Acute toxicity</b>	
<b>口头的/Oral LD50</b>	老鼠/Rat: rat: 700mg/kg.
<b>皮肤的/Dermal LD50</b>	兔子/rabbit: rabbit: 400mg/kg
<b>易愤怒/Irritation</b>	
<b>皮肤/Skin</b>	Slightly irritating to skin but not sufficient for classification. 对皮肤稍有刺激, 但不足以进行分类。
<b>眼睛/Eye</b>	Slightly irritating to eyes but not sufficient for classification. 对眼睛稍有刺激, 但不足以进行分类。

**12. 生态学资料(ECOLOGICAL INFORMATION)**

<b>名称/ Name</b>	二乙基二硫代氨基甲酸锌/ Zinc diethyl dithiocarbamate
<b>生态学/ Ecotoxicity</b>	
<b>鱼/ fish</b>	96h-LC50 (Oncorhynchus mykiss): 0.49 mg/l.
<b>水蚤/ daphnia</b>	48h-EC50 (Daphnia magna): 0.24 mg/l.
<b>初级生物/ Degradation Biotic</b>	不能被轻易分解/ Not readily biodegradable.

**13. 废弃处理(DISPOSAL CONSIDERATIONS)**

<b>产品/ Product</b>	Avoid discharge into the environment. Small quantities: According to local regulations. Large quantities: Consult Meyors Chemical for special advice.
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**包装污染/ Contaminated packaging**

**其他信息/ Other information**

避免流入环境。  
 少量：根据当地规定。  
 大量：请联系美尔化工获取建议。  
 According to local regulations.  
 根据当地规定。  
 Waste code number: Please refer to your specific industry  
 in the European Waste Catalogue.  
 消耗物代码：请联系欧洲在消耗物领域的特殊工业。

**14. 运输信息(TRANSPORT INFORMATION)**

14.1 UN-Number	
DOT, ADR, IMDG, IATA	Not regulated UN 3077
14.2 UN proper shipping name:	
DOT	Not regulated
ADR	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID,N.O.S.(zinc bis (diethyldithiocarbamate))
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,N.O.S.(zinc bis (diethyldithiocarbamate)), MARINE POLLUTANT
IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,N.O.S.(zinc bis (diethyldithiocarbamate))
14.3 Transport hazard class(es)	
DOT Class ADR	Not regulated
 	Class:9 Miscellaneous dangerous substances and articles. Label: 9
 	Class: 9 (M7) Miscellaneous dangerous substances and articles. Label: 9
14.4 Packing group	
DOT	N/A
ADR, IMDG, IATA	III
14.5 Environmental hazards	Product contains environmentally hazardous substances:(zinc bis (diethyldithiocarbamate))
Marine pollutant	No Symbol (fish and tree)
Special Marking (ADR)	Symbol(fishandtree)
Special Marking (IATA)	Symbol(fishandtree)
14.6.Special precautions for user	Warning: Miscellaneous dangerous substances and articles.
Danger code (Kemler)	90
EMS Number	F-A,S-F
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:Not applicable. Transport/Additional information	
ADR	
Limited quantities (LQ)	5kg
Transport category	3
Tunnel restriction code	E
UN "Model Regulation"	UN 3077,ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S. (zinc bis (diethyldithiocarbamate)), 9, III

**15. 法规信息(REGULATORY INFORMATION)**



15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
United States (USA)

SARA Section 355 (extremely hazardous substances)	Substance is not listed.
SARA Section 313 (Specific toxic chemical listings)	Zinc Compound.
TSCA (Toxic Substances Control Act)	Substance is listed.
Proposition 65 (California)	
Chemicals known to cause cancer	Substance is not listed.
Chemicals known to cause reproductive toxicity for females	Substance is not listed.
Chemicals known to cause reproductive toxicity for males	Substance is not listed.
Chemicals known to cause developmental toxicity	Substance is not listed.
Carcinogenic Categories	
EPA (Environmental Protection Agency)	Substance is not listed.
IARC (International Agency for Research on Cancer)	Substance is not listed.
TLV (Threshold Limit Value established by ACGIH)	Substance is not listed.
NIOSH-Ca (National Institute for Occupational Safety and Health)	Substance is not listed.
OSHA-Ca (Occupational Safety & Health Administration)	Substance is not listed.
Canada	
Canadian Domestic Substances List (DSL)	Substance is listed.
Canadian Ingredient Disclosure list (limit 0.1%)	Substance is not listed.
Canadian Ingredient Disclosure list (limit 1%)	14324-55-1,zinc bis (diethylthiocarbamate)

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

**16. 其他信息(OTHER INFORMATION)**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H304 May be fatal if swallowed and enters airways. R65 Harmful: may cause lung damage if swallowed. Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous

Goods DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labeling of Chemicals ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service) division of the American

Chemical Society) NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System

(Canada) DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)