

Versio 1.0	n Revision Date: 26.05.2015	MSDS Number: 131324-00001	Date of last issue: - Date of first issue: 26.05.2015		
1. PRC	DUCT AND COMPANY ID	ENTIFICATION			
Pi	roduct name	<sup>:</sup> ZN-50			
Pı	roduct code	: 0000000000000000000000000000000000000	622260		
SI	DS-Identcode	<sup>:</sup> 032G	032G		
М	anufacturer or supplier's c	letails			
C	ompany	<sup>:</sup> Bestolife Corpo	pration		
Ad	ddress	<sup>:</sup> 2777 N. Stemn Dallas TX 7520	nons Frwy Ste 1800 07,		
Te	elephone	<sup>:</sup> 855-243-9164/	972-865-8961		
Er	mergency telephone number	CHEMTREC: 8	300-101-2201, International: +1-703-527-3887		
Te	elefax	<sup>:</sup> 214-631-3047			
R	ecommended use of the cl	nemical and restric	tions on use		
R	ecommended use	: Industrial use Thread Compo Offshore indus Mining, (withou	ound (Pipe Dope) and Jacking grease for use in tries It offshore industries)		
R	estrictions on use	: Do not use on pheres.	oxygen lines or in oxygen enriched atmos-		

### 2. HAZARDS IDENTIFICATION

GHS	Classification
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Serious eye damage/eye irri- tation	: Category 2
Acute aquatic toxicity	: Category 1
Chronic aquatic toxicity	: Category 1

#### **GHS Label element**



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Haza	rd pictograms		¥2
Signa	l word	: Warning	
Haza	rd statements	: H319 Causes H410 Very tox	serious eye irritation. ic to aquatic life with long lasting effects.
Precautionary statements		: Prevention: P264 Wash sk P273 Avoid re P280 Wear ey Response: P305 + P351 - for several mir easy to do. Co P337 + P313 I tention. P391 Collect s Disposal: P501 Dispose disposal plant.	in thoroughly after handling. lease to the environment. e protection/ face protection. + P338 IF IN EYES: Rinse cautiously with water nutes. Remove contact lenses, if present and intinue rinsing. f eye irritation persists: Get medical advice/ at- pillage. of contents/ container to an approved waste

#### Other hazards which do not result in classification

None known.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Hazardous components

Chemical Name	CAS-No.	Concentration (%)
Zinc	7440-66-6	>= 50 - < 70
Distillates (petroleum), hydrotreated heavy naph-	64742-52-5	>= 30 - < 50
thenic		
Talc	14807-96-6	>= 1 - < 10
Calcium oxide	1305-78-8	>= 1 - < 10
Zinc oxide	1314-13-2	>= 1 - < 10
12-Hydroxy lithium stearate	7620-77-1	>= 1 - < 10
Calcium petroleum sulfonates	61789-86-4	>= 0.1 - < 1
Quartz	14808-60-7	>= 0.1 - < 1
Lead	7439-92-1	< 0.1
Cadmium	7440-43-9	< 0.1

#### 4. FIRST AID MEASURES

General advice

: In the case of accident or if you feel unwell, seek medical advice immediately.



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		When symptom advice.	s persist or in all cases of doubt seek medical				
lf inha	aled	: If inhaled, remo Get medical atte	: If inhaled, remove to fresh air. Get medical attention if symptoms occur.				
In cas	se of skin contact	: In case of conta Remove contan Get medical atte Wash clothing b Thoroughly clea	<ul> <li>In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.</li> </ul>				
In cas	se of eye contact	: In case of conta for at least 15 n If easy to do, re Get medical atte	<ul> <li>In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.</li> <li>If easy to do, remove contact lens, if worn.</li> <li>Get medical attention.</li> </ul>				
lf swa	allowed	: If swallowed, D Get medical atte Rinse mouth the	: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.				
Most and e delay	important symptoms ffects, both acute and ed	ptoms : Causes serious eye irritation. ute and					
Prote	ction of first-aiders	: First Aid respon and use the rec when the poten	ders should pay attention to self-protection, ommended personal protective equipment tial for exposure exists.				
Notes	s to physician	: Treat symptoma	atically and supportively.				
5. FIREFI	GHTING MEASURES						

Suitable extinguishing media :	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing : media	None known.
Specific hazards during fire- : fighting	Exposure to combustion products may be a hazard to health.
Hazardous combustion prod- : ucts	Carbon oxides Metal oxides
Specific extinguishing meth- : ods	Use extinguishing measures that are appropriate to local cir- cumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.



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	Specia for fire	l protective equipment fighters	:	In the event of fir Use personal pro	e, wear self-contained breathing apparatus. tective equipment.
6. A		NTAL RELEASE MEAS	SUF	RES	
	Persor tive eq gency	nal precautions, protec- uipment and emer- procedures	:	Use personal pro Follow safe hand ment recommend	tective equipment. ling advice and personal protective equip- lations.
	Environmental precautions		:	: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.	
	Method contair	ds and materials for ment and cleaning up	:	Sweep up or vac tainer for disposa Local or national posal of this mate employed in the of mine which regul Sections 13 and certain local or na	uum up spillage and collect in suitable con- l. regulations may apply to releases and dis- erial, as well as those materials and items cleanup of releases. You will need to deter- ations are applicable. 15 of this SDS provide information regarding ational requirements.

### 7. HANDLING AND STORAGE

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation	:	Use only with adequate ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Keep away from water. Protect from moisture. Take care to prevent spills, waste and minimize release to the environment.
Conditions for safe storage	:	Keep in properly labelled containers. Store in accordance with the particular national regulations.
Materials to avoid	:	Do not store with the following product types: Strong oxidizing agents



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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parame- ters / Permissible	Basis
Distillatos (potroloum), by-	64742-52-5		5 mg/m3	SG OFI
drotreated beavy nanothenic	04742-32-3	term) (Mist)	5 mg/m5	36 OLL
		PEL (short	10 mg/m3	SG OFI
		term) (Mist)	To hig/his	OU OLL
		TWA (Inhal-	5 mg/m3	ACGIH
		able fraction)	o mg/mo	//00///
Talc	14807-96-6	PEL (long	2 mg/m3	SG OFI
	14007 00 0	term)	2 mg/mo	OC OLL
		TWA (Res-	2 mg/m3	ACGIH
		pirable frac-	2 mg/mo	
		tion)		
Calcium oxide	1305-78-8	PEL (long	2 mg/m3	SG OFI
		term)	2 mg/mo	00022
		TWA	2 mg/m3	ACGIH
Zinc oxide	1314-13-2	PEL (long	10 mg/m3	SG OEL
		term) (Dust)		
		PEL (long	5 mg/m3	SG OEL
		term)	e	
		(Fumes)		
		PEL (short	10 mg/m3	SG OEL
		term)		
		(Fumes)		
		TWA (Res-	2 mg/m3	ACGIH
		pirable frac-		
		tion)		
		STÉL (Res-	10 mg/m3	ACGIH
		pirable frac-	0	
		tion)		
12-Hydroxy lithium stearate	7620-77-1	PEL (long	10 mg/m3	SG OEL
		term)	U U	
		TWA	10 mg/m3	ACGIH
Quartz	14808-60-7	PEL (long	0.1 mg/m3	SG OEL
		term) (Res-	U U	
		pirable dust)		
		TWA (Res-	0.025 mg/m3	ACGIH
		pirable frac-	(Silica)	
		tion)		
Lead	7439-92-1	PEL (long	0.15 mg/m3	SG OEL
		term) (Dust	(Lead)	
		and fume)		
		TWA	0.05 mg/m3	ACGIH
			(Lead)	
Cadmium	7440-43-9	PEL (long	0.01 mg/m3	SG OEL
		term)		
		TWA	0.01 mg/m3	ACGIH



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		(cadmium)	
	TWA (Res- pirable frac- tion)	0.002 mg/m3 (cadmium)	ACGIH

#### Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Calcium hydroxide	1305-62-0	PEL (long term)	5 mg/m3	SG OEL
		TWA	5 mg/m3	ACGIH

#### **Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sam- pling time	Permissible concentra- tion	Basis
Lead	7439-92-1	Lead (Lead)	Blood		50 µg/dl	SG BTLV
		Lead (Lead)	Blood		30 µg/dl	SG BTLV
		Lead (Lead)	Hb		11 g/dl	SG BTLV
		Lead (Lead)	Hb		10 g/dl	SG BTLV
		Lead (Lead)	In blood	Not criti- cal	30 µg/ 100 ml	ACGIH BEI
Cadmium	7440-43-9	cadmium (cadmium)	Blood		5 µg/l	SG BTLV
		B2 micro- globulin (cadmium)	Urine		290 µg/l	SG BTLV
		cadmium (cadmium)	In blood	Not criti- cal	5 µg/l	ACGIH BEI
		cadmium (cadmium)	Urine	Not criti- cal	5 µg/g cre- atinine	ACGIH BEI

**Engineering measures** : Processing may form hazardous compounds (see section 10). Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

#### Personal protective equipment

Respiratory protection	: Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Filter type	: Combined particulates and organic vapour type
Hand protection Material	: Impervious gloves



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Remarks	: Choose gloves on the concent stance and spe determined for applications, w chemicals of th glove manufact end of workday	to protect hands against chemicals depending ration and quantity of the hazardous sub- ecific to place of work. Breakthrough time is not the product. Change gloves often! For special e recommend clarifying the resistance to be aforementioned protective gloves with the turer. Wash hands before breaks and at the 7.
Eye protection	: Wear the follow Safety goggles	ving personal protective equipment:
Skin and body protection	: Select appropri resistance data potential. Skin contact m clothing (gloves	iate protective clothing based on chemical a and an assessment of the local exposure ust be avoided by using impervious protective s, aprons, boots, etc).
Hygiene measures	: Ensure that eye located close to When using do Wash contamir	e flushing systems and safety showers are o the working place. o not eat, drink or smoke. nated clothing before re-use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Viscous semi-solid
Colour	:	grey
Odour	:	Petroleum
Odour Threshold	:	No data available
рН	:	Not applicable (not an aqueous solution)
	:	No data available
	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available



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Relativ	ve density	: 1.8		
Solubil Wat	lity(ies) er solubility	: negligible		
Partitic octano	on coefficient: n- I/water	: No data av	ailable	
Auto-ig	gnition temperature	: No data av	ailable	
Decom	position temperature	: No data av	ailable	
Flow ti	me	: No data av	ailable	
Explos	vive properties	: Not explosi	ve	
Oxidizi	ing properties	: The substa	nce or mixture is not classified as oxidizing	J.
Molecu	ular weight	: No data av	ailable	

#### **10. STABILITY AND REACTIVITY**

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac- tions	:	Can react with strong oxidizing agents. Hazardous decomposition products will be formed upon con- tact with water or humid air.
Conditions to avoid	:	Exposure to moisture
Incompatible materials	:	Oxidizing agents Water
Hazardous decomposition produ Contact with water or hu-	uct :	s Calcium hydroxide

# mid air

#### 11. TOXICOLOGICAL INFORMATION

Information on likely routes of	:	Skin contact
exposure		Ingestion
		Eye contact

#### Acute toxicity

Not classified based on available information.

#### Components:

#### Zinc:



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Acut	te oral toxicity	: LD50 (Rat): > Method: OEC Assessment: icity	2,000 mg/kg D Test Guideline 401 The substance or mixture has no acute oral tox-
Acut	te inhalation toxicity	: LC50 (Rat): > Exposure tim Test atmosph Method: OEC Assessment: tion toxicity	• 5.41 mg/l e: 4 h here: dust/mist CD Test Guideline 403 The substance or mixture has no acute inhala-
<b>Dist</b> Acut	<b>illates (petroleum), hyd</b> te oral toxicity	drotreated heavy n : LD50 (Rat): > Method: OEC Remarks: Ba	<b>aphthenic:</b> • 5,000 mg/kg CD Test Guideline 401 sed on data from similar materials
Acu	te inhalation toxicity	: LC50 (Rat): > Exposure tim Test atmosph Method: OEC Assessment: tion toxicity Remarks: Ba	• 5.53 mg/l e: 4 h here: dust/mist D Test Guideline 403 The substance or mixture has no acute inhala- sed on data from similar materials
Acut	te dermal toxicity	: LD50 (Rabbit Method: OEC Remarks: Ba	): > 5,000 mg/kg D Test Guideline 402 sed on data from similar materials
<b>Talc</b> Acut	: te oral toxicity	: LD50 (Rat): > Remarks: Ba	• 5,000 mg/kg sed on data from similar materials
<b>Calc</b> Acut	cium oxide: te oral toxicity	: LD50 (Rat): > Method: OEC Assessment: icity	2,000 mg/kg D Test Guideline 425 The substance or mixture has no acute oral tox-
Acut	te dermal toxicity	: LD50 (Rabbit Method: OEC Assessment: toxicity Remarks: Ba	): > 2,500 mg/kg D Test Guideline 402 The substance or mixture has no acute dermal sed on data from similar materials
<b>Zinc</b> Acut	<b>: oxide:</b> te oral toxicity	: LD50 (Rat): > Method: OEC	- 5,000 mg/kg D Test Guideline 401
Acut	te inhalation toxicity	: LC50 (Rat): > Exposure tim Test atmosph Method: OEC Assessment:	5.7 mg/l e: 4 h here: dust/mist D Test Guideline 403 The substance or mixture has no acute inhala-



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			tion toxicity	
<b>12-</b> Act	Hydroxy lithium stearate: ute oral toxicity	:	LD50 (Rat): > 2,0 Assessment: The icity	000 mg/kg e substance or mixture has no acute oral tox-
<b>Ca</b> Act	Icium petroleum sulfonate ute oral toxicity	es: :	LD50 (Rat): > 5, Method: OECD <sup>-</sup>	000 mg/kg Test Guideline 401
Ас	ute inhalation toxicity	:	LC50 (Rat): > 1.9 Exposure time: 4 Test atmosphere Assessment: The tion toxicity Remarks: Based	9 mg/l h :: dust/mist e substance or mixture has no acute inhala- on data from similar materials
Acı	ute dermal toxicity	:	LD50 (Rabbit): > Assessment: The toxicity	4,000 mg/kg e substance or mixture has no acute dermal
<b>Qu</b> Acu	artz: ute oral toxicity	:	LD50 (Rat): > 5,0	000 mg/kg
<b>Lea</b> Act	ad: ute oral toxicity	:	LD50 (Rat): > 2, Method: OECD <sup>-</sup> Assessment: The icity Remarks: Based	000 mg/kg Test Guideline 401 e substance or mixture has no acute oral tox- on data from similar materials
Acı	ute dermal toxicity	:	LD50 (Rat): > 2,0 Method: OECD Assessment: The toxicity Remarks: Based	000 mg/kg Test Guideline 402 e substance or mixture has no acute dermal on data from similar materials
<b>Ca</b> Act	dmium: ute oral toxicity	:	LD50 (Rat): 2,33	0 mg/kg
Act	ute inhalation toxicity	:	Acute toxicity es Test atmosphere Method: Expert j	imate: > 0.05 mg/l : dust/mist udgement

#### Skin corrosion/irritation

Not classified based on available information.

#### Components:

**Distillates (petroleum), hydrotreated heavy naphthenic:** Species: Rabbit Result: No skin irritation Remarks: Based on data from similar materials



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#### Talc:

Species: Rabbit Result: No skin irritation

#### Calcium oxide:

Species: Rabbit Method: OECD Test Guideline 404 Result: Skin irritation Remarks: Based on data from similar materials

#### Zinc oxide:

Species: Rabbit Method: OECD Test Guideline 404 Result: No skin irritation

#### 12-Hydroxy lithium stearate:

Species: Rabbit Result: No skin irritation Remarks: Based on data from similar materials

#### Calcium petroleum sulfonates:

Species: Rabbit Method: OECD Test Guideline 404 Result: No skin irritation Remarks: Based on data from similar materials

#### Lead:

Species: Rabbit Method: OECD Test Guideline 404 Result: No skin irritation Remarks: Based on data from similar materials

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Components:

**Zinc:** Species: Rabbit Result: No eye irritation Method: OECD Test Guideline 405

#### Distillates (petroleum), hydrotreated heavy naphthenic:

Species: Rabbit Result: No eye irritation Remarks: Based on data from similar materials

#### Talc:

Species: Rabbit Result: No eye irritation

#### Calcium oxide:

Species: Rabbit Result: Irreversible effects on the eye Method: OECD Test Guideline 405



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#### Zinc oxide:

Species: Rabbit Result: No eye irritation Method: OECD Test Guideline 405

#### 12-Hydroxy lithium stearate:

Species: Rabbit Result: No eye irritation Remarks: Based on data from similar materials

#### Calcium petroleum sulfonates:

Species: Rabbit Result: No eye irritation Method: OECD Test Guideline 405 Remarks: Based on data from similar materials

#### Lead:

Species: Rabbit Result: No eye irritation Method: OECD Test Guideline 405 Remarks: Based on data from similar materials

#### Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information. Respiratory sensitisation: Not classified based on available information.

#### Components:

**Distillates (petroleum), hydrotreated heavy naphthenic:** Test Type: Buehler Test Exposure routes: Skin contact Species: Guinea pig Result: negative Remarks: Based on data from similar materials

#### Talc:

Exposure routes: Skin contact Species: Humans Result: negative

#### Zinc oxide:

Test Type: Maximisation Test (GPMT) Exposure routes: Skin contact Species: Guinea pig Method: OECD Test Guideline 406 Result: negative

#### 12-Hydroxy lithium stearate:

Test Type: Local lymph node assay (LLNA) Exposure routes: Skin contact Species: Mouse Method: OECD Test Guideline 429 Result: negative



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#### Calcium petroleum sulfonates:

Test Type: Buehler Test Exposure routes: Skin contact Species: Guinea pig Result: positive

Assessment: Probability or evidence of low to moderate skin sensitisation rate in humans

#### Lead:

Test Type: Maximisation Test (GPMT) Exposure routes: Skin contact Species: Guinea pig Method: OECD Test Guideline 406 Result: negative Remarks: Based on data from similar materials

#### Germ cell mutagenicity

Not classified based on available information.

#### **Components:**

Zinc:	
Genotoxicity in vitro :	Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: positive Remarks: Based on data from similar materials
:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo :	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Rat Application Route: Ingestion Result: negative Remarks: Based on data from similar materials
Germ cell mutagenicity - : Assessment	Weight of evidence does not support classification as a germ cell mutagen.
Distillates (petroleum), hydrotr Genotoxicity in vitro :	eated heavy naphthenic: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo :	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Method: OECD Test Guideline 474 Result: negative Remarks: Based on data from similar materials



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	Talc: Genoto	oxicity in vitro	:	Test Type: DNA thesis in mamm Result: negative	damage and repair, unscheduled DNA syn- alian cells (in vitro) e	
	Genotoxicity in vivo :		:	Test Type: Chromosome aberration test in vitro Species: Rat Application Route: Ingestion Result: negative		
	Calciu Genoto	m oxide: oxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative		
	Zinc or Genoto	<b>xide:</b> oxicity in vitro	:	Test Type: Back Method: OECD Result: negative	erial reverse mutation assay (AMES) Test Guideline 471 e	
	Genoto	oxicity in vivo	:	Test Type: Man cytogenetic ass Species: Rat Application Rou Method: OECD Result: negative	nmalian erythrocyte micronucleus test (in vivo ay) te: Inhalation Test Guideline 474	
	Calciu Genoto	m petroleum sulfor exicity in vitro	nates:	Test Type: Bac Method: OECD Result: negative	erial reverse mutation assay (AMES) Test Guideline 471 e	
	Genoto	oxicity in vivo	:	Test Type: Man cytogenetic ass Species: Mouse Application Rou Result: negative	nmalian erythrocyte micronucleus test (in vivo ay) te: Ingestion	
	Lead: Genoto	oxicity in vitro	:	Test Type: In vi malian cells Result: negative Remarks: Base	tro sister chromatid exchange assay in mam- e d on data from similar materials	
	Genoto	oxicity in vivo	:	Test Type: Man cytogenetic ass Species: Rat Application Rou Result: positive Remarks: Base	nmalian erythrocyte micronucleus test (in vivo ay) te: Ingestion d on data from similar materials	
	<b>Cadmi</b> Genoto	um: oxicity in vitro	:	Test Type: In vi malian cells	tro sister chromatid exchange assay in mam-	



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				Result: Equivocal Remarks: Based	on data from similar materials	
	Genotoxicity in vivo		:	: Test Type: Mammalian bone marrow sister chromatid ex- change Species: Mouse Application Route: Intraperitoneal injection Result: positive		
	Germ o Assess	ell mutagenicity - ment	:	Positive result(s) genicity tests.	from in vivo mammalian somatic cell muta-	
	Carcin	ogenicity				
	Not cla	ssified based on avai	lable	information.		
	Compo	onents:				
	Distilla Species Applica Exposu Methoo Result	tes (petroleum), hy s: Mouse tion Route: Skin con tre time: 78 weeks I: OECD Test Guideli negative	drotre tact ne 45	eated heavy naph	thenic:	
	Talc: Species Applica Exposu Result:	s: Mouse ition Route: inhalation ire time: 2 Years negative	n (dus	t/mist/fume)		
	Calcius Species Applica Exposu Result: Remark	<b>m oxide:</b> s: Rat ition Route: Ingestion ire time: 104 weeks negative ks: Based on data fro	om sin	nilar materials		
	Quartz Species Applica Result: Remart The sul inhalati	: s: Humans tion Route: inhalation positive ks: IARC (Internation bstance is inextricabl on hazard.	n (dus al Age y bou	t/mist/fume) ency for Research nd in the product a	on Cancer) nd therefore does not contribute to a dust	
	Carcino ment	ogenicity - Assess-	:	Positive evidence tion)	from human epidemiological studies (inhala-	
	Lead: Species Applica Exposu Result:	s: Rat ition Route: Ingestion ire time: 2 Years negative	I			
	Cadmi	um:				



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	Species Applica Exposu Result: Remark	s: Rat tion Route: inhalation ( ire time: 18 Months positive ks: Based on data from	dus sirr	t/mist/fume) illar materials	
	Carcino ment	ogenicity - Assess-	:	Sufficient evidenc	e of carcinogenicity in animal experiments
	Reproc	<b>luctive toxicity</b> ssified based on availa	ble	information.	
	Compo	onents:			
	Talc: Effects ment	on foetal develop-	:	Test Type: Embry Species: Rat Application Route Result: negative	o-foetal development : Ingestion
	Calciun Effects ment	<b>n oxide:</b> on foetal develop-	:	: Test Type: Embryo-foetal development Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative	
	Zinc ox Effects	<b>tide:</b> on fertility	: Test Type: Two-generation reproduction toxicity st Species: Rat Application Route: Ingestion Method: OECD Test Guideline 416 Result: negative		eneration reproduction toxicity study : Ingestion est Guideline 416
	Effects ment	on foetal develop-	:	<ul> <li>Test Type: Embryo-foetal development</li> <li>Species: Hamster</li> <li>Application Route: Ingestion</li> <li>Result: negative</li> <li>Remarks: Based on data from similar materials</li> </ul>	
	Calciun Effects	n petroleum sulfonat on fertility	es: :	Test Type: One-ge Species: Rat Application Route Method: OECD Te Result: negative Remarks: Based of	eneration reproduction toxicity study : Ingestion est Guideline 415 on data from similar materials
	Lead: Effects	on fertility	:	Test Type: Two-go Species: Mouse Application Route Result: positive Remarks: Based o	eneration reproduction toxicity study : Ingestion on data from similar materials



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Effects on foetal develop- ment		: Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: positive Remarks: Based on data from similar materials					
R s	eproductive toxicity - As- essment	: Positive evident fertility from hur dence of advers miological studi	: Positive evidence of adverse effects on sexual function and fertility from human epidemiological studies., Positive evidence of adverse effects on development from human epidemiological studies.				
C	admium: ffects on fertility	: Species: Rat Application Rou Result: positive Remarks: Base	ite: inhalation (dust/mist/fume) d on data from similar materials				
E m	ffects on foetal develop- ient	: Test Type: Emb Species: Mouse Application Rou Method: OECD Result: positive Remarks: Base	oryo-foetal development e ite: inhalation (dust/mist/fume) Test Guideline 414 d on data from similar materials				
R s	eproductive toxicity - As- essment	: Some evidence fertility, based c adverse effects ments.	of adverse effects on sexual function and on animal experiments., Some evidence of on development, based on animal experi-				

#### STOT - single exposure

Not classified based on available information.

#### Components:

**Calcium oxide:** Assessment: May cause respiratory irritation.

#### STOT - repeated exposure

Not classified based on available information.

#### Components:

#### Zinc oxide:

Exposure routes: inhalation (dust/mist/fume) Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

#### 12-Hydroxy lithium stearate:

Exposure routes: Ingestion Assessment: No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

#### Quartz:

Exposure routes: inhalation (dust/mist/fume) Target Organs: Lungs



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Assessment: Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.

#### Lead:

Assessment: Causes damage to organs through prolonged or repeated exposure.

#### Cadmium:

Exposure routes: Ingestion Target Organs: Kidney, Lungs, Bone Assessment: Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

Exposure routes: inhalation (dust/mist/fume) Target Organs: Kidney, Lungs, Bone Assessment: Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.

#### Repeated dose toxicity

#### **Components:**

**Zinc:** Species: Rat NOAEL: 31 mg/kg Application Route: Ingestion Exposure time: 90 d

#### Distillates (petroleum), hydrotreated heavy naphthenic:

Species: Rat NOAEL: > 0.98 mg/l Application Route: inhalation (dust/mist/fume) Exposure time: 28 d Remarks: Based on data from similar materials

#### Zinc oxide:

Species: Rat NOAEL: 1.5 mg/m3 Application Route: inhalation (dust/mist/fume) Exposure time: 3 m Method: OECD Test Guideline 413

#### 12-Hydroxy lithium stearate:

Species: Rat NOAEL: > 88 mg/kg Application Route: Ingestion Exposure time: 90 d

#### Calcium petroleum sulfonates:

Species: Rat > 1000 mg/kg Application Route: Skin contact Exposure time: 28 d Method: OECD Test Guideline 410 Remarks: Based on data from similar materials



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#### Quartz:

Species: Humans LOAEL: 0.053 mg/m3 Application Route: inhalation (dust/mist/fume) Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

#### Lead:

Species: Rat LOAEL: 0.05 mg/kg Application Route: Ingestion Exposure time: 6 - 12 m Remarks: Based on data from similar materials

#### Cadmium:

Species: Rat LOAEL: 0.025 mg/m3 Application Route: inhalation (dust/mist/fume) Exposure time: 13 w Remarks: Based on data from similar materials

Species: Rat NOAEL: 0.2 mg/kg Application Route: Ingestion Exposure time: 12 m Remarks: Based on data from similar materials

#### Aspiration toxicity

Not classified based on available information.

#### **12. ECOLOGICAL INFORMATION**

#### Ecotoxicity

#### Components:

Zinc: Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 0.78 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1.83 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae	:	IC50 (Pseudokirchneriella subcapitata (green algae)): 0.15 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic tox- icity)	:	1
Toxicity to fish (Chronic tox- icity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0.199 mg/l Exposure time: 30 d



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	Toxicity to daphnia and other aquatic invertebrates (Chron- ic toxicity)		:	NOEC (Daphnia Exposure time: 2	magna (Water flea)): 0.1 mg/l 1 d
	M-Fact toxicity	or (Chronic aquatic )	:	1	
	Toxicity	y to bacteria	:	EC50: 5.2 mg/l Exposure time: 3 Method: OECD T	h est Guideline 209
	<b>Distillates (petroleum), hyd</b> e Toxicity to fish		otre	eated heavy naph LC50 (Pimephale Exposure time: 90 Method: OECD T Remarks: Based	<b>thenic:</b> s promelas (fathead minnow)): > 100 mg/l 6 h est Guideline 203 on data from similar materials
	Toxicity aquatic	y to daphnia and other invertebrates	:	EC50 (Daphnia n Exposure time: 4 Remarks: Based	nagna (Water flea)): > 10,000 mg/l 8 h on data from similar materials
	Toxicity	∕ to algae	:	EC50 (Pseudokir mg/l Exposure time: 7: Method: OECD T Remarks: Based	chneriella subcapitata (green algae)): > 100 2 h est Guideline 201 on data from similar materials
	Toxicity aquatic ic toxic	y to daphnia and other invertebrates (Chron- ity)	:	NOEC (Daphnia Exposure time: 2 Remarks: Based	magna (Water flea)): 10 mg/l 1 d on data from similar materials
	Toxicity	y to bacteria	:	NOEC: > 1.93 mg Exposure time: 1 Remarks: Based	g/l 0 min on data from similar materials
	<b>Talc:</b> Toxicity	/ to fish	:	LC50 (Brachydar Exposure time: 2	io rerio (zebrafish)): > 100,000 mg/l 4 h
	<b>Calciu</b> Toxicity	<b>m oxide:</b> / to fish	:	LC50 (Gasteroste mg/l Exposure time: 9 Remarks: Based	eus aculeatus (threespine stickleback)): 457 6 h on data from similar materials
	Toxicity aquatic	/ to daphnia and other invertebrates	:	LC50: 158 mg/l Exposure time: 9 Remarks: Based	6 h on data from similar materials
	Toxicity	y to algae	:	EC50 (Pseudokir mg/l Exposure time: 7: Method: OECD T	chneriella subcapitata (green algae)): 184.57 2 h est Guideline 201



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				Remarks: Based	on data from similar materials
				NOEC (Pseudoki mg/l Exposure time: 72 Method: OECD T Remarks: Based	rchneriella subcapitata (green algae)): 48 2 h est Guideline 201 on data from similar materials
	Toxicity aquatic ic toxic	y to daphnia and other invertebrates (Chron- ity)	:	NOEC: 32 mg/l Exposure time: 12 Remarks: Based	2 d on data from similar materials
	Toxicity	y to bacteria	:	EC50: 300.4 mg/l Exposure time: 3 Method: OECD T Remarks: Based	h est Guideline 209 on data from similar materials
	Zinc ox Toxicity	<b>xide:</b> ⁄ to fish	:	LC50 (Oncorhyno Exposure time: 90 Remarks: Based	chus mykiss (rainbow trout)): 330 - 780 μg/l δ h on data from similar materials
	Toxicity aquatic	y to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 48 Method: OECD T	nagna (Water flea)): 6.9 - 16.2 mg/l 3 h est Guideline 202
	Toxicity	∕ to algae	:	EC50 (Selenastru Exposure time: 72 Method: OECD T	ım capricornutum (green algae)): 136 μg/l 2 h est Guideline 201
				NOEC (Selenastr Exposure time: 72 Method: OECD T	um capricornutum (green algae)): 24 µg/l 2 h est Guideline 201
	M-Fact icity)	or (Acute aquatic tox-	:	1	
	Toxicity icity)	y to fish (Chronic tox-	:	NOEC (Oncorhyr Exposure time: 30 Remarks: Based	ichus mykiss (rainbow trout)): 199 μg/l ) d on data from similar materials
	Toxicity aquatic ic toxic	y to daphnia and other invertebrates (Chron- ity)	:	NOEC (Daphnia i Exposure time: 2 Remarks: Based	magna (Water flea)): 37 μg/l 1 d on data from similar materials
	M-Fact toxicity	or (Chronic aquatic )	:	1	
	Toxicity	∕ to bacteria	:	EC50: 5.2 mg/l Exposure time: 3 Method: OECD T Remarks: Based	h est Guideline 209 on data from similar materials

Calcium petroleum sulfonates:



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	Toxicity to fish		:	<ul> <li>LL50 (Cyprinodon variegatus (sheepshead minnow)): &gt; 10,000 mg/l</li> <li>Exposure time: 96 h</li> <li>Test substance: Water Accommodated Fraction</li> <li>Method: OECD Test Guideline 203</li> </ul>			
	Toxicity aquatio	y to daphnia and other invertebrates	:	EC50 (Daphnia m Exposure time: 48 Test substance: V Remarks: Based o	agna (Water flea)): > 1,000 mg/l 3 h Vater Accommodated Fraction on data from similar materials		
	Toxicity	∕ to algae	:	EC50 (Pseudokiro 1,000 mg/l Exposure time: 72 Test substance: V Remarks: Based of	chneriella subcapitata (green algae)): > 2 h Vater Accommodated Fraction on data from similar materials		
				NOEC (Pseudokir mg/l Exposure time: 72 Test substance: V Remarks: Based of	rchneriella subcapitata (green algae)): 1,000 2 h Vater Accommodated Fraction on data from similar materials		
	Toxicity	y to bacteria	:	EC50: > 10,000 m Exposure time: 3 Method: OECD Te	ng/l h est Guideline 209		
	<b>Lead:</b> Toxicity	y to fish	:	LC50 (Oncorhync Exposure time: 96 Remarks: Based o	hus mykiss (rainbow trout)): 1,170 µg/l S h on data from similar materials		
	Toxicity aquatic	y to daphnia and other invertebrates	:	EC50 (Ceriodaphi Exposure time: 48 Remarks: Based o	nia dubia (water flea)): 596.83 µg/l 3 h on data from similar materials		
	Toxicity	∕ to algae	:	EC50: > 10 - 100 Exposure time: 72 Remarks: Based of	μg/l 2 h on data from similar materials		
				NOEC: > 10 - 100 Exposure time: 72 Remarks: Based of	) µg/l 2 h on data from similar materials		
	M-Fact icity)	or (Acute aquatic tox-	:	10			
	Toxicity icity)	y to fish (Chronic tox-	:	NOEC: > 10 - 100 Remarks: Based (	) μg/l on data from similar materials		
	Toxicity aquatic ic toxic	y to daphnia and other invertebrates (Chron- ity)	:	NOEC: > 10 - 100 Remarks: Based o	) μg/l on data from similar materials		



(Chronic aquatic 1: 5 fish 6 daphnia and other vertebrates 6 algae (Acute aquatic tox-	:	1 LC50 (Ictalurus Exposure time: Remarks: Base EC50 (Daphnia Exposure time: Remarks: Base EC50 (Pseudol Exposure time:	punctatus (channel catfish)): 4,480 μg/l 96 h d on data from similar materials pulex (Water flea)): 42 μg/l 48 h d on data from similar materials kirchneriella subcapitata (green algae)): 70 μg/		
n: o fish o daphnia and other vertebrates o algae (Acute aquatic tox-	: :	LC50 (Ictalurus Exposure time: Remarks: Base EC50 (Daphnia Exposure time: Remarks: Base EC50 (Pseudol Exposure time:	e punctatus (channel catfish)): 4,480 μg/l 96 h ed on data from similar materials 1 pulex (Water flea)): 42 μg/l 48 h ed on data from similar materials kirchneriella subcapitata (green algae)): 70 μg		
o daphnia and other vertebrates o algae (Acute aquatic tox-	:	EC50 (Daphnia Exposure time: Remarks: Base EC50 (Pseudol Exposure time:	a pulex (Water flea)): 42 μg/l 48 h ed on data from similar materials sirchneriella subcapitata (green algae)): 70 μg		
Acute aquatic tox-	:	EC50 (Pseudol Exposure time:	kirchneriella subcapitata (green algae)): 70 μg		
(Acute aquatic tox-		<ul> <li>EC50 (Pseudokirchneriella subcapitata (green algae)): 70 μg/ Exposure time: 72 h Method: OECD Test Guideline 201</li> </ul>			
fish (Chronic toy	•	10			
	:	NOEC (Salmo Exposure time:	trutta (brown trout)): 62 μg/l 10 d		
o daphnia and other vertebrates (Chron-	:	NOEC (Mysido Exposure time: Remarks: Base	psis bahia): 2 μg/l 33 d d on data from similar materials		
(Chronic aquatic	:	10			
nce and degradabili	ity				
<u>Components:</u> Distillates (petroleum), hydr Biodegradability		eated heavy nap Result: Not rea Biodegradation Exposure time: Method: OECD	<b>ohthenic:</b> dily biodegradable. : 2 - 4 % 28 d Test Guideline 301B		
<b>xy lithium stearate</b> dability	:	Result: Readily Biodegradation Exposure time: Method: OECD	biodegradable : 78 % 28 d Test Guideline 301C		
<b>petroleum sulfonat</b> dability	: <b>es:</b> :	Result: Not rea Biodegradation Exposure time: Method: OECD	dily biodegradable. : 8.6 % 28 d Test Guideline 301F		
	<b>xy lithium stearate</b> dability <b>petroleum sulfonat</b> dability	<b>xy lithium stearate:</b> dability : <b>petroleum sulfonates:</b> dability :	ability       Exposure time: Method: OECD         xy lithium stearate:       Biodegradation         dability       Result: Readily         Biodegradation       Exposure time: Method: OECD         petroleum sulfonates:       Result: Not rea         dability       Result: Not rea         biodegradation       Exposure time: Method: OECD		

#### Components:



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<b>Zinc:</b> Bioaccumula		umulation	:	Species: Fish Bioconcentration	actor (BCF): 177		
	Zinc oxide: Bioaccumulation		:	Species: Fish Bioconcentration factor (BCF): 177			
	Calciun Partition octanol	<b>m petroleum sulfona</b> n coefficient: n- /water	tes: :	log Pow: > 6.65			
	<b>Mobilit</b> No data	<b>y in soil</b> a available					
	Other adverse effects No data available						
13. DISPOSAL CONSIDERATIONS							
	Dispos	al methods					
	Waste	from residues	:	Dispose of in acco	ordance with local regulations.		
	Contam	ninated packaging	:	Dispose of as unu Empty containers dling site for recyc	sed product. should be taken to an approved waste han- ling or disposal.		

#### 14. TRANSPORT INFORMATION

international regulation
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UNRTDG		
UN number	:	UN 3077
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc, Zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	9
IATA-DGR		
UN/ID No.	:	UN 3077
Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Zinc, Zinc oxide)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	956
Packing instruction (passen-	:	956



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ger airc	craft)								
IMDG-	Code								
UN number Proper shipping name Class Packing group Labels		:	: UN 3077 : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SC						
			N.O.S. (Zinc, Zinc oxide)						
		:	9						
		:	III						
		:	9						
EmS C	ode	:	F-A, S-F						
Marine	pollutant	:	yes						

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

#### **15. REGULATORY INFORMATION**

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and : Not applicable Environmental Protection and Management (Hazardous Substances) Regulations

The components of this prod	uc	t are reported in the following inventories:
DSL	:	All components of this product are on the Canadian DSL
TSCA	:	All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

#### Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

#### **16. OTHER INFORMATION**

#### Further information

Sources of key data used to	:	Internal technical data, data from raw material SDSs, OECD
compile the Safety Data		eChem Portal search results and European Chemicals Agen-
Sheet		cy, http://echa.europa.eu/

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.



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Date	format		dd mm yyayy		
Date			GG.IIIII.yyyy		
Full	text of other abbreviati	ons			
ACG	ЯН	:	USA. ACGIH Thr	eshold Limit Values (TLV)	
ACG	SIH BEI	:	ACGIH - Biologic	al Exposure Indices (BEI)	
SG I	SG BTLV		Singapore. Biological Threshold Limit Values		
SG OEL		:	Singapore. Workplace Safety and Health Act - First Schedule		
			Permissible Expo	sure Limits of Toxic Substances	
ACG	SIH / TWA	:	8-hour, time-weig	hted average	
ACG	SIH / STEL	:	Short-term expos	ure limit	
SG (	OEL / PEL (long term)	:	Permissible Expo	sure Level (PEL) Long Term	
SG	OEL / PEL (short term)	:	Permissible Expo	sure Level (PEL) Short Term	

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

SG / EN