



SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Trade name : SHELL GADUS (Railmaster LFG EP 2)
Product group : Mixtures

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Manufacturer

Shell & Whitmore Reliability Solutions, LLC
930 Whitmore Drive
Rockwall, Texas, 75087
USA

T 1.800.381.6585 or 1.972.771.1000

Regulatory@whitmores.com - www.shellwhitmorereliability.com

Distributor

Shell & Whitmore Reliability Solutions of Canada Ltd.
Suite 3810, Bankers Hall West
888 - 3rd Street S.W.
Calgary, AB, T2P 5C5
Canada

T 1.800.381.6585 or 1.972.771.1000

Regulatory@whitmores.com - www.shellwhitmorereliability.com

1.4. Emergency telephone number

Emergency number : For Chemical Emergency Call CHEMTREC 24hr/day 7days/week
Within USA and Canada: 1.800.424.9300
Outside USA and Canada: +1.703.527.3887
(collect calls accepted)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Serious eye damage/eye irritation Category 2 H319 Causes serious eye irritation
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labeling

Hazard pictograms (GHS CA) :



Signal word (GHS CA) : Warning

Hazard statements (GHS CA) :

H319 - Causes serious eye irritation

Precautionary statements (GHS CA) :

P264 - Wash hands, forearms and face thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
Bis(2-ethylhexyl) phosphorodithioate Zinc Salt	(T-4)-bis(O,O-bis(2-ethylhexyl)phosphorodithioato-kappaS,kappaS')zinc / 1-hexanol, 2-ethyl-, O,O-diester with phosphorodithioic acid, zinc salt / additin RC1529 / additin RC3180 / bis(2-ethylhexyl) phosphorodithioate zinc salt / DDP-Zn-O / multadit OB / phosphorodithioic acid, O,O-bis(2-ethylhexyl) ester, zinc salt / RC 31800 / ZDDP (=zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)) / ZDTP (=zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate)) / zinc bis[O,O-bis(2-ethylhexyl)] bis(dithiophosphate) / zinc O,O-di-2-ethylhexyl phosphorodithioate / zinc O,O-bis(2-ethylhexyl)dithiophosphate / zinc, bis(O,O-bis(2-ethylhexyl) phosphorodithioato-S,S')- (T-4)- / zinc, O,O'-di-2-ethylhexyl dithiophosphate / ZPTP 3	CAS-No.: 4259-15-8	≤ 2.5	Eye Dam. 1, H318

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

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First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up	: Mechanically recover the product.
Other information	: Dispose of materials or solid residues at an authorized site.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:				
Neoprene or nitrile rubber gloves				
Type	Material	Permeation	Thickness (mm)	Penetration
Disposable gloves	Nitrile rubber (NBR), Neoprene rubber (HNBR)	2 (> 30 minutes)	0.3 mm - 0.6 mm	

Eye protection:
Wear eye protection

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
No respiratory protection needed under normal use conditions

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Grease.
Color	: Gray
Odor	: petroleum-like odor
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: 194 °C
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: 249 mm ² /s @ 40°C
Explosion limits	: Not applicable

9.2. Other information

VOC content : < 0.1 %

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SECTION 10: Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: No additional information available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hardening time:	: No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
LD50 oral rat	3100 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 5000 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
ATE CA (oral)	3100 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
NOAEL (oral,rat,90 days)	125 mg/kg body weight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)

Aspiration hazard	: Not classified
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SHELL GADUS (Railmaster LFG EP 2)	
Viscosity, kinematic	249 mm ² /s @ 40°C

Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
Viscosity, kinematic	131.6 mm ² /s (40 °C, ASTM D445: Capillary viscometer)
Animal studies and expert judgment for classification	False

Symptoms/effects after eye contact	: Eye irritation.
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

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Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
LC50 - Fish [1]	46 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinodon variegatus, Semi-static system, Fresh water, Experimental value, GLP)
LC50 - Fish [2]	46 mg/l Test organisms (species):

12.2. Persistence and degradability

Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Partition coefficient n-octanol/water (Log Pow)	3.59 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 22 °C)

12.4. Mobility in soil

Bis(2-ethylhexyl) phosphorodithioate Zinc Salt (4259-15-8)	
Surface tension	63.7 mN/m (21 °C, 1.25 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Ecology - soil	Low potential for adsorption in soil.

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with TDG / DOT / IMDG / IATA

TDG	DOT	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

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14.6. Special precautions for user

TDG

No data available

DOT

No data available

IMDG

No data available

IATA

No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

No additional information available

15.2. International regulations

No additional information available

SECTION 16: Other information

Issue date : 08-25-2021
Revision date : 08-26-2022
Supersedes : 08-03-2022

Full text of H-phrases:

H318	Causes serious eye damage
H319	Causes serious eye irritation

Safety Data Sheet (SDS), Canada

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.