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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name RAPSIM

Other means of identification

Product code 50001926

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

Use of the Sub- : A fertilizer with micronutrients for use in agriculture

stance/Mixture

Recommended restrictions

on use

Use as recommended by the label.

For professional users only.

1.3 Details of the supplier of the safety data sheet

<u>Supplier Address</u> FMC Agro Limited

Rectors Lane, Pentre

Flintshire CH5 2DH United Kingdom

Telephone: + 44 1244 537370 E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call: England and Wales: 44-870-8200418 (CHEMTREC)

Medical emergency: England and Wales: 111 Scotland: 84 54 24 2424

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Skin irritation, Category 2 H315: Causes skin irritation.

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Long-term (chronic) aquatic hazard, Cat-

H411: Toxic to aquatic life with long lasting effects.

egory 2

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms :





Signal word : Warning

Hazard statements : H315 Causes skin irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P264 Wash skin thoroughly after handling.P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

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

soap.

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

attention.

Disposal:

P501 Dispose of contents and/or container in accordance

with hazardous waste regulations.

Hazardous components which must be listed on the label:

ethanediol

Additional Labelling

EUH208 Contains 1,2-benzisothiazol-3(2H)-one.

May produce an allergic reaction.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No.	Classification	Concentration
	EC-No.		(% w/w)
	Index-No.		
	Registration number		
manganese carbonate	598-62-9	Aquatic Chronic 2;	>= 10 - < 20
	209-942-9	H411	
sulfur	7704-34-9	Skin Irrit. 2; H315	>= 10 - < 20
	231-722-6		
	016-094-00-1		
	01-2119487295-27-		
	0055		
zinc oxide	1314-13-2	Aquatic Acute 1;	>= 2.5 - < 10
	215-222-5	H400	
	030-013-00-7	Aquatic Chronic 1;	
		H410	
		M-Factor (Acute	
		aquatic toxicity): 1	
		M-Factor (Chronic	
		aquatic toxicity): 10	
ethanediol	107-21-1	Acute Tox. 4; H302	>= 1 - < 10
	203-473-3	STOT RE 2; H373	
	603-027-00-1	(Kidney)	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.

Show this safety data sheet to the doctor in attendance.

Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical

advice.

If symptoms persist, call a physician.

In case of skin contact : If skin irritation persists, call a physician.

If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution.

Remove contact lenses. Protect unharmed eye.

Keep eye wide open while rinsing.

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If eye irritation persists, consult a specialist.

If swallowed Do not induce vomiting without medical advice.

Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Risks Causes skin irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO2, water spray or regular foam.

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Unsuitable extinguishing

media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

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

courses.

Hazardous combustion prod: :

ucts

Fire may produce irritating, corrosive and/or toxic gases.

Ammonia Carbon oxides

5.3 Advice for firefighters

for firefighters

Special protective equipment : Wear self-contained breathing apparatus for firefighting if nec-

essary.

Further information Collect contaminated fire extinguishing water separately. This

must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

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6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform

respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel,

acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the ap-

plication area.

Dispose of rinse water in accordance with local and national

regulations.

Advice on protection against :

fire and explosion

Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.

Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must

comply with the technological safety standards.

Further information on stor-

age stability

No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Fertilizers

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis	
manganese car- bonate	598-62-9	TWA (Inhalable)	0.2 mg/m3 (Manganese)	GB EH40	
		TWA (Respirable	0.05 mg/m3	GB EH40	
		fraction)	(Manganese)		
		TWA (inhalable	0.2 mg/m3	2017/164/EU	
		fraction)	(Manganese)		
Further information	Indicative				
		TWA (Respirable	0.05 mg/m3	2017/164/EU	
		fraction)	(Manganese)		
Further information	Indicative				
ethanediol	107-21-1	TWA (Vapour)	20 ppm	GB EH40	
		, , ,	52 mg/m3		
Further information	Can be absorbed through the skin. The assigned substances are those for				
	which there are concerns that dermal absorption will lead to systemic toxicity.				
		TWA (particles)	10 mg/m3	GB EH40	
Further information	Can be absorbed through the skin. The assigned substances are those for				
	which there are concerns that dermal absorption will lead to systemic toxicity.				
		STEL (Vapour)	40 ppm	GB EH40	
		, , ,	104 mg/m3		
Further information	Can be absorbed through the skin. The assigned substances are those for				
	which there are concerns that dermal absorption will lead to systemic toxicity.				
		STEL	40 ppm	2000/39/EC	
			104 mg/m3		
Further information	Identifies the possibility of significant uptake through the skin, Indicative				
		TWA	20 ppm	2000/39/EC	
			52 mg/m3		
Further information	Identifies the possibility of significant uptake through the skin, Indicative				

8.2 Exposure controls

Personal protective equipment

Eye protection : Eye wash bottle with pure water

Tightly fitting safety goggles

Hand protection

Material : Wear chemical resistant gloves, such as barrier laminate,

butyl rubber or nitrile rubber.

Remarks : The suitability for a specific workplace should be discussed

with the producers of the protective gloves.

Skin and body protection : Impervious clothing

Choose body protection according to the amount and concen-

tration of the dangerous substance at the work place.

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Respiratory protection : No personal respiratory protective equipment normally re-

quired.

Protective measures : Always have on hand a first-aid kit, together with proper in-

structions.

Plan first aid action before beginning work with this product. Ensure that eye flushing systems and safety showers are

located close to the working place. Wear suitable protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Form : liquid

Colour : beige

Odour : slight

Odour Threshold : No data available

pH : 7.0 - 10.0

Concentration: 100 %

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : not determined

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapour pressure : No data available

Relative density : 1.44 - 1.48

Density : No data available

Bulk density : No data available

Solubility(ies)

Water solubility : dispersible

Solubility in other solvents : No data available

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Partition coefficient: n-

octanol/water

: No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 600 - 2,000 mPa,s

Viscosity, kinematic : No data available

Oxidizing properties : Non-oxidizing

9.2 Other information

Particle size : 8.0 - 18.0 µm

Particle Size Distribution : No data available

Self-ignition : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : No data available

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

In case of fire hazardous decomposition products may be produced such as:

Toxic fumes

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 3,000 mg/kg

Method: Calculation method

Assessment: The component/mixture is moderately toxic after

single ingestion.

Components:

manganese carbonate:

Acute oral toxicity : LD0 (Rat, female): > 2,000 mg/kg

Method: OECD Test Guideline 420

Remarks: no mortality

Acute inhalation toxicity : LC0 (Rat, male and female): > 5.35 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Remarks: no mortality

Based on data from similar materials

sulfur:

Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.43 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 402

zinc oxide:

Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 423

LD50 (Mouse, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 401

Target Organs: Liver, Heart, spleen, Stomach, Pancreas

Symptoms: Damage Remarks: mortality

Acute inhalation toxicity : LC0 (Rat, male and female): > 1.79 mg/l

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Exposure time: 4 h

Test atmosphere: dust/mist Method: EPA OPP 81 - 3 Remarks: no mortality

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 2,000 mg/kg

Method: OECD Test Guideline 402

ethanediol:

Acute inhalation toxicity : LC0 (Rat, male and female): > 2.5 mg/l

Exposure time: 6 h

Test atmosphere: dust/mist Remarks: no mortality

Acute dermal toxicity : LD50 (Mouse, male and female): > 3,500 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks : May cause skin irritation in susceptible persons.

Components:

manganese carbonate:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

sulfur:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Skin irritation

zinc oxide:

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 431

Result : No skin irritation

ethanediol:

Species : Rabbit

Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Vapours may cause irritation to the eyes, respiratory system

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and the skin.

Components:

manganese carbonate:

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

sulfur:

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

zinc oxide:

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

ethanediol:

Species : Rabbit

Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks : No data is available on the product itself.

Components:

manganese carbonate:

Test Type : Local lymph node test

Species : Mouse

Method : OECD Test Guideline 429

Result : Does not cause skin sensitisation.
Remarks : Based on data from similar materials

sulfur:

Test Type : Magnussen-Kligman test

Species : Guinea pig

Method : OECD Test Guideline 406

Result : Does not cause skin sensitisation.

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zinc oxide:

Test Type : Maximisation Test

Species : Guinea pig

Method : OECD Test Guideline 406

Result : Does not cause skin sensitisation.

Test Type : Maximisation Test

Species : Guinea pig

Method : OECD Test Guideline 406

Result : Substance is not considered to be potential skin sensitiser.

ethanediol:

Test Type : Maximisation Test

Species : Guinea pig

Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Components:

manganese carbonate:

Genotoxicity in vitro : Test Type: reverse mutation assay

Method: OECD Test Guideline 471

Result: negative

Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: negative

Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Micronucleus test

Species: Mouse (female) Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

Remarks: Based on data from similar materials

Germ cell mutagenicity- As-

sessment

Weight of evidence does not support classification as a germ

cell mutagen.

sulfur:

Genotoxicity in vitro : Test Type: reverse mutation assay

Method: OECD Test Guideline 471

Result: negative

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Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Method: OECD Test Guideline 473

Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test

Species: Mouse (male and female) Method: OECD Test Guideline 474

Result: negative

Germ cell mutagenicity- As-

sessment

Weight of evidence does not support classification as a germ

cell mutagen.

zinc oxide:

Genotoxicity in vitro : Test Type: reverse mutation assay

Method: Mutagenicity (Salmonella typhimurium - reverse mu-

tation assay)
Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: equivocal

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster fibroblasts Method: OECD Test Guideline 473

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Result: positive

Test Type: Micronucleus test

Test system: Human epithelioid cells Method: OECD Test Guideline 487

Result: negative

Test Type: Micronucleus test Test system: Human lymphocytes

Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test

Species: Mouse (male)

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: negative

ethanediol:

Genotoxicity in vitro : Test Type: reverse mutation assay

Method: OPPTS 870.5100

Result: negative

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Genotoxicity in vivo : Test Type: dominant lethal test

Species: Rat

Application Route: Oral

Result: negative

Carcinogenicity

Not classified based on available information.

Components:

zinc oxide:

Species : Mouse, male and female

Application Route : Oral Exposure time : 1 year

Dose : 4400, 22000 mg/l
NOAEL : > 22,000 mg/l
Result : negative

Remarks : Based on data from similar materials

Carcinogenicity - Assess-

ment

: Animal testing did not show any carcinogenic effects.

ethanediol:

Species : Mouse
Application Route : Oral
Exposure time : 24 month(s)
Result : negative

Reproductive toxicity

Not classified based on available information.

Components:

manganese carbonate:

Effects on fertility : Test Type: Two-generation study

Species: Rat, male and female

Application Route: inhalation (dust/mist/fume)

Dose: 0, .005, .01, .02 mg/L

General Toxicity - Parent: NOEL: 0.02 mg/l Method: OECD Test Guideline 416

Result: negative

Remarks: Based on data from similar materials

Effects on foetal develop-

ment

Species: Rat

Application Route: inhalation (dust/mist/fume)

Duration of Single Treatment: 15 d

General Toxicity Maternal: NOAEL: 0.025 mg/l Developmental Toxicity: LOAEL: 0.025 mg/l Embryo-foetal toxicity: NOAEL: 0.025 mg/l

Method: OECD Test Guideline 414

Result: negative

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Remarks: Based on data from similar materials

Reproductive toxicity - As-

sessment

: Weight of evidence does not support classification for repro-

ductive toxicity

zinc oxide:

Effects on fertility : Test Type: Two-generation study

Species: Rat, male and female

Application Route: Oral

Dose: 7.5, 15, 30mg/kg bw/day

Frequency of Treatment: 7 days/week

General Toxicity - Parent: LOAEL: 7.5 mg/kg body weight

General Toxicity F1: LOAEL: 30 mg/kg body weight

Method: OECD Test Guideline 416

Result: negative

Remarks: Based on data from similar materials

Test Type: one-generation reproductive toxicity

Species: Rat, male Application Route: Oral Dose: 4,000 milligram per liter Frequency of Treatment: 32 daily

General Toxicity - Parent: LOAEL: 4,000 mg/l General Toxicity F1: LOAEL: 4,000 mg/l

Symptoms: Reduced fertility

Target Organs: male reproductive organs

Result: positive

Remarks: Based on data from similar materials

Effects on foetal develop-

ment

Species: Rat

Application Route: inhalation (dust/mist/fume) Dose: .0003, 0.002, 0.008 milligram per liter

Duration of Single Treatment: 14 d

General Toxicity Maternal: LOAEC: 0.008 mg/l Developmental Toxicity: NOAEC: 0.008 mg/l

Embryo-foetal toxicity: NOAEC Mating/Fertility: 0.008 mg/l

Method: OECD Test Guideline 414

Result: negative

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposureNot classified based on available information.

Components:

manganese carbonate:

Assessment : The substance or mixture is not classified as specific target

organ toxicant, single exposure.

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STOT - repeated exposure

Not classified based on available information.

Components:

sulfur:

Assessment : The substance or mixture is not classified as specific target

organ toxicant, repeated exposure.

zinc oxide:

Exposure routes : Oral

Target Organs : Central nervous system, Reproductive organs

Assessment : The substance or mixture is classified as specific target organ

toxicant, repeated exposure, category 2.

ethanediol:

Exposure routes : Oral Target Organs : Kidney

Assessment : The substance or mixture is classified as specific target organ

toxicant, repeated exposure, category 2.

Repeated dose toxicity

Components:

manganese carbonate:

Species : Rabbit, male
LOAEC : 0.0039 mg/l
Application Route : Inhalation
Test atmosphere : dust/mist
Exposure time : 4 - 6 weeks

Dose : 0, .001, .0039 mg/L

Remarks : Based on data from similar materials

sulfur:

Species : Rat, male and female

NOAEL : 1,000 mg/kg

Application Route : Oral Exposure time : 90 d

Method : OECD Test Guideline 408

Species : Rat, male and female NOAEL : 400 - 1,000 mg/kg

Application Route : Dermal Exposure time : 28 d

Method : OECD Test Guideline 410

zinc oxide:

Species : Rat, male and female

NOAEL : 31.52 mg/kg

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LOAEL : 127.52 mg/kg

Application Route : Oral Exposure time : 13 weeks

Dose : 0, 31.52, 127.52 mg/kg
Method : OECD Test Guideline 408

Target Organs : Pancreas Symptoms : Necrosis

Remarks : Based on data from similar materials

Species : Mouse, male and female

NOEL : 3000 ppm Application Route : Oral Exposure time : 13 weeks

Dose : 0, 300, 3000, 30000 ppm Method : OECD Test Guideline 408

Remarks : Based on data from similar materials

Species : Rat, male LOAEL : 0.0045 mg/l

Application Route : inhalation (dust/mist/fume)

Exposure time : 3 months

Dose : 0.0003, 0.0015, 0.004mg/l Method : OECD Test Guideline 413

Target Organs : Lungs Remarks : mortality

Species : Rat, male and female LOAEL : 75 mg/kg bw/day

Application Route : Dermal Exposure time : 28d

Dose : 0, 75, 180, 360 mg/kg bw/day Method : OECD Test Guideline 410

ethanediol:

Species : Rat
NOAEL : 150 mg/kg
Application Route : Oral
Exposure time : 12 months

Species : Dog

NOAEL : > 2,200 - < 4,400 mg/kg

Application Route : Dermal Exposure time : 4 weeks

Method : OECD Test Guideline 410

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Components:

zinc oxide:

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Inhalation : Symptoms: Fatigue, Sweating, bitter taste, chills, dry mouth,

flu-like symptoms

Ingestion : Symptoms: Gastrointestinal discomfort

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

manganese carbonate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3.17 mg/l

Exposure time: 96 h

Test Type: flow-through test

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 3.6 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): > 2.2

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.69

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (activated sludge): 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Remarks: Based on data from similar materials

EC50 (activated sludge): > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.55 mg/l

Exposure time: 65 d

Species: Salvelinus fontinalis (Brook trout)

Test Type: flow-through test

Remarks: Based on data from similar materials

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



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Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC: 1.3 mg/l Exposure time: 8 d

Species: Ceriodaphnia dubia (water flea)

Test Type: static test

Remarks: Based on data from similar materials

sulfur:

Toxicity to fish : LC0 (Oncorhynchus mykiss (rainbow trout)): > 0.005 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

NOEC (Daphnia magna Straus): > 0.005 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

NOEC (algae): > 0.005 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC: > 0.0025 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Remarks: No toxicity at the limit of solubility

Toxicity to soil dwelling or-

ganisms

NOEC: > 1,000 mg/kg Exposure time: 14 d

Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207

Plant toxicity : NOEC: 25.2 kg/ha

Exposure time: 14 d

Species: Avena sativa (oats) Method: OECD Test Guideline 208

Toxicity to terrestrial organ-

isms

NOEC: > 1400 - < 1900 kg/ha

Exposure time: 60 d

Species: Typhlodromus pyri

LD50: > 2,000 mg/kg Exposure time: 15 d

Species: Coturnix japonica (Japanese quail)

zinc oxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1.55 mg/l

Exposure time: 96 h Test Type: static test

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Daphnia magna (Water flea)): 0.76 mg/l

Exposure time: 48 h

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Method: OECD Test Guideline 202

LC50 : 0.37 mg/l Exposure time: 96 h Test Type: static test

EC50: 0.14 mg/l Exposure time: 24 h Test Type: static test

EC50: 0.072 mg/l Exposure time: 96 h Test Type: static test

Toxicity to algae/aquatic

plants

IC50 (Pseudokirchneriella subcapitata (algae)): 0.044 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (algae)): 0.024 mg/l

Exposure time: 3 d

Method: OECD Test Guideline 201

IC50 (Skeletonema costatum (marine diatom)): 1.23 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

IC50 : 3.28 mg/l Exposure time: 96 h

Method: OECD Test Guideline 201

NOEC (Dunaliella tertiolecta (marine algae)): 0.01 mg/l

Exposure time: 4 d Test Type: static test

EC50 (Dunaliella tertiolecta (marine algae)): 0.65 mg/l

Exposure time: 4 d Test Type: static test

(Chlorella vulgaris (Fresh water algae)): 1.16 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC50 (Anabaena flos-aquae (cyanobacterium)): 0.3 mg/l

Exposure time: 96 h Test Type: static test

EC50: 0.69 mg/l Exposure time: 3 d Test Type: static test

EC50 (Phaeodactylum tricornutum): 1.12 mg/l

Exposure time: 24 h Test Type: static test

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M-Factor (Acute aquatic tox-

icity)

Toxicity to microorganisms EC50 (activated sludge): > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

EC50 (Tetrahymena pyriformis): 7.1 mg/l

Exposure time: 24 h

Test Type: Growth inhibition

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.440 mg/l

Exposure time: 72 d

Species: Oncorhynchus mykiss (rainbow trout)

Test Type: flow-through test

Remarks: Based on data from similar materials

NOEC: 0.026 mg/l Exposure time: 30 d

Species: Jordanella floridae (flagfish) Method: OECD Test Guideline 210

Remarks: Based on data from similar materials

NOEC: 0.530 mg/l Exposure time: 1,095 d

Species: Salvelinus fontinalis (Brook trout)

Test Type: flow-through test

Remarks: Based on data from similar materials

NOEC: 0.056 mg/l Exposure time: 116 d

Species: Salmo trutta (brown trout) Method: OECD Test Guideline 210

Remarks: Based on data from similar materials

NOEC: 0.025 mg/l Exposure time: 27 d

Species: Fish

Test Type: semi-static test

Remarks: Based on data from similar materials

NOEC: 0.078 mg/l Exposure time: 248 d

Species: Pimephales promelas (fathead minnow)

Test Type: flow-through test

Remarks: Based on data from similar materials

NOEC: 0.050 mg/l Exposure time: 155 d

Species: Fish

Test Type: flow-through test

Remarks: Based on data from similar materials

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Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

LOEC: 0.125 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

M-Factor (Chronic aquatic

toxicity)

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Toxicity to soil dwelling or-

ganisms

NOEC: 750 mg/kg Exposure time: 21 d

Species: Eisenia fetida (earthworms)

ethanediol:

LC50 (Pimephales promelas (fathead minnow)): > 72,860 mg/l Toxicity to fish

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

IC50 (Pseudokirchneriella subcapitata (green algae)): 10,940

mg/l

Exposure time: 96 h

Toxicity to microorganisms (activated sludge): > 1,995 mg/l

> Exposure time: 30 min Method: ISO 8192

Toxicity to fish (Chronic tox-

icity)

1,500 mg/l

Exposure time: 28 d

Species: Menidia peninsulae (tidewater silverside)

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

33,911 mg/l

Exposure time: 21 d

Species: Daphnia magna (Water flea)

12.2 Persistence and degradability

Components:

sulfur:

Biodegradability Remarks: The methods for determining the biological degra-

dability are not applicable to inorganic substances.

ethanediol:

Biodegradability Result: Readily biodegradable.

Biodegradation: 90 - 100 %

Exposure time: 10 d

Method: OECD Test Guideline 301A

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12.3 Bioaccumulative potential

Components:

zinc oxide:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)

Exposure time: 14 d

Bioconcentration factor (BCF): 2,060

ethanediol:

Partition coefficient: n-

octanol/water

log Pow: -1.36

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered

to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

0.1% or higher.

12.6 Other adverse effects

Product:

Endocrine disrupting poten-

tial

The substance/mixture does not contain components considered to have endocrine disrupting properties according to

REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

Additional ecological infor-

mation

An environmental hazard cannot be excluded in the event of

unprofessional handling or disposal.

Toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water

courses or the soil.

Do not contaminate ponds, waterways or ditches with chemi-

cal or used container.

Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.

Dispose of as unused product.

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Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Zinc oxide)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Zinc oxide)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Zinc oxide)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S. (Zinc oxide)

IATA : Environmentally hazardous substance, liquid, n.o.s.

(Zinc oxide)

14.3 Transport hazard class(es)

 ADN
 : 9

 ADR
 : 9

 RID
 : 9

 IMDG
 : 9

 IATA
 : 9

14.4 Packing group

ADN

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

ADR

Packing group : III Classification Code : M6

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Hazard Identification Number : 90 Labels : 9 Tunnel restriction code : (-)

RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo : 964

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passen: 964

ger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH List of restrictions (Annex 17) : Conditions of restriction for the fol-

lowing entries should be considered:

Number on list 3

ethanediol (Number on list 3)

UK REACH Candidate list of substances of very high

concern (SVHC) for Authorisation

Not applicable

The Persistent Organic Pollutants Regulations (retained

Regulation (EU) 2019/1021 as amended for Great Brit-

ain)

Not applicable

Regulation (EC) No 1005/2009 on substances that de-

plete the ozone layer

: Not applicable

UK REACH List of substances subject to authorisation

(Annex XIV)

Not applicable

Control of Major Accident Hazards Regulations E1

2015 (COMAH)

ENVIRONMENTAL HAZARDS

E2

E1

Other regulations:

The components of this product are reported in the following inventories:

TCSI : Not in compliance with the inventory

TSCA : Product contains substance(s) not listed on TSCA inventory.

AIIC : Not in compliance with the inventory

DSL : This product contains the following components that are not

on the Canadian DSL nor NDSL.

Ethanol, 2,2',2"-nitrilotris-, compd. with .alpha.-[2,4,6-tris(1-phenylethyl)phenyl]-.omega.-hydroxypoly(oxy-1,2-ethanediyl)

phosphate

emulsion of silicone

Sodium Polyacrylate Homopolymer

Naphthalenesulfonic acid, methyl-, polymer with formalde-

hyde, sodium salt sodium acrylate

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ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

TECI: Not in compliance with the inventory

15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed. H315 : Causes skin irritation.

H373 : May cause damage to organs through prolonged or repeated

exposure if swallowed.

H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard

Skin Irrit. : Skin irritation

STOT RE : Specific target organ toxicity - repeated exposure

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first

list of indicative occupational exposure limit values

2017/164/EU : Europe. Commission Directive 2017/164/EU establishing a

fourth list of indicative occupational exposure limit values

GB EH40 : UK. EH40 WEL - Workplace Exposure Limits

2000/39/EC / TWA : Limit Value - eight hours 2000/39/EC / STEL : Short term exposure limit 2017/164/EU / TWA : Limit Value - eight hours

GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration

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associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Classification of the mixture:

Classification procedure:

Skin Irrit. 2 H315 Calculation method Aquatic Chronic 2 H411 Calculation method

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