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



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

1.1 Product identifier

Product name MAPLE DF

Other means of identification

Product code 50001682

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 : Use as recommended by the label.

on use For professional users only.

1.3 Manufacturer or supplier's details

<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)

Serious eye damage/eye irritation, Cate- H318: Causes serious eye damage.

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gory 1

Specific target organ toxicity - repeated H373: May cause damage to organs through pro-

exposure, Category 2 longed or repeated exposure.

Long-term (chronic) aquatic hazard, Cat- H411: Toxic to aquatic life with long lasting effects.

egory 2

2.2 Label elements

Hazard pictograms

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

2013/120, and on of 2020/1301)



Signal word : Danger

Hazard statements : H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or

repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P260 Do not breathe dust.

P264 Wash skin thoroughly after handling.P273 Avoid release to the environment.P280 Wear eye protection/ face protection.

Response:

P314 Get medical advice/ attention if you feel unwell.

P391 Collect spillage.

Hazardous components which must be listed on the label:

Manganese sulfate, monohydrate

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. EC-No. Index-No. Registration number | Classification | Concentration (% w/w) |
|--------------------------------|---|---|--------------------------|
| Manganese sulfate, monohydrate | 10034-96-5 | Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Chronic 2; H411 | >= 90 - <= 100 |

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Show this safety data sheet to the doctor in attendance.

Protection of first-aiders : First Aid responders should pay attention to self-protection

and use the recommended protective clothing

Avoid inhalation, ingestion and contact with skin and eyes. If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

If inhaled : Move to fresh air.

If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambu-

lance.

In case of skin contact : Take off all contaminated clothing immediately.

Wash contaminated clothing before re-use.

Wash off immediately with plenty of water for at least 15

minutes.

Get medical attention immediately if irritation develops and

persists.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

Take victim immediately to hospital.

If swallowed : Rinse mouth.

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Do NOT induce vomiting.

If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed.

Causes serious eye irritation.

May cause damage to organs through prolonged or repeated

exposure.

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 : Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Keep containers and surroundings cool with water spray.

Unsuitable extinguishing

media

High volume water jet

Do not spread spilled material with high-pressure water

streams.

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.

Sulphur oxides

5.3 Advice for firefighters

Special protective equipment:

for firefighters

Firefighters should wear protective clothing and self-contained

breathing apparatus.

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 : Refer to protective measures listed in sections 7 and 8.

Evacuate personnel to safe areas.

Never return spills in original containers for re-use.

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Mark the contaminated area with signs and prevent access to

unauthorized personnel.

Only qualified personnel equipped with suitable protective

equipment may intervene.

For disposal considerations see section 13.

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 : 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 : Avoid formation of respirable particles.

Do not breathe vapours/dust. 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

Avoid dust formation. Provide appropriate exhaust ventilation

at places where dust is formed.

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 re-

sealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological

safety standards.

Further information on stor-

age stability

Keep in a dry place.

No decomposition if stored and applied as directed.

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7.3 Specific end use(s)

Specific use(s) : Fertilizers

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

dust of any kind 10 mg/m3

Value type (Form of exposure): TWA (Inhalable)

Basis: GB EH40

4 mg/m3

Value type (Form of exposure): TWA (Respirable fraction)

Basis: GB EH40

| Components | CAS-No. | Value type (Form | Control parameters | Basis |
|-------------------|---------------------------------|------------------|--------------------|-------------|
| | | of exposure) | | |
| Manganese sul- | 10034-96-5 | TWA (Inhalable) | 0.2 mg/m3 | GB EH40 |
| fate, monohydrate | | | (Manganese) | |
| | | 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 | | | |

Derived No Effect Level (DNEL)

| Substance name | End Use | Exposure routes | Potential health ef- | Value |
|----------------|---------|-----------------|----------------------|-------|
| | | | fects | |

Predicted No Effect Concentration (PNEC)

| Substance name | Environmental Compartment | Value |
|--------------------------------|---------------------------|-------------|
| Manganese sulfate, monohydrate | Fresh water | 0.03 mg/l |
| | Fresh water sediment | 0.011 mg/kg |
| | Marine sediment | 0.001 mg/kg |
| | Soil | 25.1 mg/kg |

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Eye wash bottle with pure water

Tightly fitting safety goggles

Wear face-shield and protective suit for abnormal processing

problems.

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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 : Dust impervious protective suit

Choose body protection according to the amount and concen-

tration of the dangerous substance at the work place.

Respiratory protection : Use respiratory protection unless adequate local exhaust ven-

tilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Equipment should conform to EN 143

Filter type : Particulates type (P)

Protective measures : Plan first aid action before beginning work with this product.

Wear suitable protective equipment.

Ensure that eye flushing systems and safety showers are

located close to the working place.

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

structions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : solid Form : powder

Colour : No data available

Odour : odourless

Odour Threshold : No data available

pH : 5

Concentration: 100 %

Melting point/freezing point

Boiling point/boiling range

No data available

No data available
Flash point : No data available

Upper explosion limit / Upper :

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapour pressure Relative vapour density No data availableNo data available

Relative density

Density : No data available
Bulk density : No data available

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Solubility(ies)

Water solubility : soluble

Solubility in other solvents : No data available

Partition coefficient: n-

octanol/water

No data available

Auto-ignition temperature : No data available Decomposition temperature : No data available

Viscosity

Viscosity, dynamic

No data available

Viscosity, kinematic : No data available

Explosive properties

No data available

Oxidizing properties : Non-oxidizing

9.2 Other information

Particle size : No data available Particle Size Distribution : 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.

Dust may form explosive mixture in air.

10.4 Conditions to avoid

Conditions to avoid : Heat

Avoid dust formation.

Avoid extreme temperatures

10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

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

Based on available data, the classification criteria are not met.

Product:

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

Method: Calculation method

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Components:

Manganese sulfate, monohydrate:

Acute oral toxicity : LD50 (Rat, male and female): 2,150 mg/kg

Acute inhalation toxicity : LC0 (Rat, male and female): > 4.45 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Remarks: no mortality

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Remarks : No data available

Components:

Manganese sulfate, monohydrate:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : No data available

Components:

Manganese sulfate, monohydrate:

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Species : Rabbit Exposure time : 72 h

Method : OECD Test Guideline 405

Result : irritating

Respiratory or skin sensitisation

Skin sensitisation

Based on available data, the classification criteria are not met.

Respiratory sensitisation

Based on available data, the classification criteria are not met.

Product:

Remarks : No data available

Components:

Manganese sulfate, monohydrate:

Test Type : Patch test Exposure routes : Dermal Species : Humans

Result : Not a skin sensitizer.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Components:

Manganese sulfate, monohydrate:

Genotoxicity in vitro : Test Type: gene mutation test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test

Species: Mouse (female) Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

Based on available data, the classification criteria are not met.

Components:

Manganese sulfate, monohydrate:

Species : Mouse, male and female

Application Route : Ingestion Result : negative

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Reproductive toxicity

Based on available data, the classification criteria are not met.

Components:

Manganese sulfate, monohydrate:

Effects on fertility : Test Type: Two-generation study

Species: Rat, male and female Method: OECD Test Guideline 416

Result: negative

Effects on foetal develop-

ment

Species: Rat

Application Route: Inhalation

Method: OECD Test Guideline 414

Result: negative

STOT - single exposure

Based on available data, the classification criteria are not met.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Manganese sulfate, monohydrate:

Species : Rat, male and female

NOAEL : 2000 mg/kg Application Route : Ingestion Exposure time : 13 w

Aspiration toxicity

Based on available data, the classification criteria are not met.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 10.1 mg/l

Exposure time: 96 h

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): 31.2 mg/l

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aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): 63.3 mg/l

Exposure time: 72 h

Components:

Manganese sulfate, monohydrate:

Toxicity to fish : LC50 (Salmo trutta (brown trout)): 49.9 mg/l

Exposure time: 96 h

Test Type: flow-through test

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Crustaceans): 13.7 mg/l

Exposure time: 96 h

Toxicity to algae/aquatic

plants

EC50 (Desmodesmus subspicatus (green algae)): 61 mg/l

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201

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

Exposure time: 3 h

Test Type: Respiration inhibition Method: OECD Test Guideline 209

Toxicity to fish (Chronic tox-

icity)

NOEC: 4.496 mg/l Exposure time: 35 d

Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210

Toxicity to daphnia and other

aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0.020 mg/l Exposure time: 14 d

Species: Crassostrea virginica

Test Type: static test

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

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.

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12.6 Other adverse effects

Product:

Endocrine disrupting poten-

tial

This substance/mixture does not contain components considered to have endocrine disrupting properties for environment

according to UK REACH Article 57(f).

Additional ecological infor-

mation

An environmental hazard cannot be excluded in the event of

unprofessional handling or disposal.

Harmful 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. Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

ADN : UN 3077
ADR : UN 3077
RID : UN 3077
IMDG : UN 3077
IATA : UN 3077

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Manganese Sulfate)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Manganese Sulfate)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

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N.O.S.

(Manganese Sulfate)

IMDG ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Manganese Sulfate)

Environmentally hazardous substance, solid, n.o.s. **IATA**

(Manganese Sulfate)

14.3 Transport hazard class(es)

Class Subsidiary risks

ADN 9 **ADR** 9 **RID** 9 **IMDG** 9 **IATA** 9

14.4 Packing group

ADN

Packing group Ш Classification Code M7 Hazard Identification Number : 90 Labels 9

ADR

Packing group Ш Classification Code M7 Hazard Identification Number : 90 Labels 9 Tunnel restriction code (-)

RID

Ш Packing group Classification Code M7 Hazard Identification Number 90 Labels 9

IMDG

Packing group Ш Labels 9 F-A, S-F **EmS Code**

IATA (Cargo)

Packing instruction (cargo

aircraft)

956

Packing instruction (LQ) Y956 Packing group Ш

Labels Miscellaneous

IATA (Passenger)

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Packing instruction (passen: 956

ger aircraft)

Packing instruction (LQ) : Y956
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.

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) : Not applicable

UK REACH Candidate list of substances of very high

concern (SVHC) for Authorisation

Not applicable

Not applicable

The Persistent Organic Pollutants Regulations (retained

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

ain)

Regulation (EC) on substances that deplete the ozone : Not applicable

layer

UK REACH List of substances subject to authorisation : Not applicable

(Annex XIV)

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Control of Major Accident Hazards Regulations E2 ENVIRONMENTAL HAZARDS

2015 (COMAH)

F2

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

TCSI : On the inventory, or in compliance with the inventory

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

AIIC : On the inventory, or in compliance with the inventory

DSL : This product contains the following components that are not

on the Canadian DSL nor NDSL.

Ethylenediaminetetraacetic acid tetrasodium salt

ENCS : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or 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

H318 : Causes serious eye damage.

H373 : May cause damage to organs through prolonged or repeated

exposure.

H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic : Long-term (chronic) aquatic hazard

Eye Irrit. : Eye irritation

STOT RE : Specific target organ toxicity - repeated exposure

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

fourth list of indicative occupational exposure limit values

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GB EH40 : UK. EH40 WEL - Workplace Exposure Limits

2017/164/EU / TWA : Limit Value - eight hours

GB EH40 / TWA : Long-term exposure limit (8-hour TWA 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 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

Further information

Classification of the mixture: Classification procedure:

1H318Calculation methodSTOT RE 2H373Calculation methodAquatic Chronic 2H411Calculation method

Disclaimer

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