SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

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

1.1 Product identifier
   Trade name : Multivitamin (with Soy Oil) Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Use of the Substance/Mixture : Veterinary product

1.3 Details of the supplier of the safety data sheet
   Company : MSD
             Shotton Lane
             NE23 3JU Cramlington NU - Great Britain
   Telephone : 44 1 670 59 30 00
   Telefax : 908-735-1496
   E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number
   1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Not a hazardous substance or mixture.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Not a hazardous substance or mixture.

2.3 Other hazards
   None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

   Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
</table>

1 / 16
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

Version: 1.3  
Revision Date: 09/13/2019  
SDS Number: 4259335-00004  
Date of last issue: 26.06.2019  
Date of first issue: 06.05.2019

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Concentration</th>
<th>Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>7695-91-2</td>
<td>231-710-0</td>
<td>&gt;= 1 - &lt; 10</td>
</tr>
<tr>
<td>Vitamin A Palmitate</td>
<td>79-81-2</td>
<td>201-228-5</td>
<td>Repr. 1B; H360D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 4; H413</td>
</tr>
<tr>
<td>Colecalciferol</td>
<td>67-97-0</td>
<td>200-673-2</td>
<td>Acute Tox. 2; H300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>603-180-00-4</td>
<td>Acute Tox. 2; H330</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 2; H310</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT RE 1; H372</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 4; H413</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; 0.0002</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Protection of first-aiders: No special precautions are necessary for first aid responders.

If inhaled: If inhaled, remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact: Wash with water and soap as a precaution. Get medical attention if symptoms occur.

In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray

Alcohol-resistant foam

Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing media: None known.
Multivitamin (with Soy Oil) Formulation

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.
Hazardous combustion products: Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.
Specific extinguishing methods:
- Use extinguishing measures that are appropriate to local circumstances 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Follow safe handling advice and personal protective equipment recommendations.

6.2 Environmental precautions

Environmental precautions:
- Discharge into the environment must be avoided.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area (e.g. by containment or oil barriers).
- Retain and dispose of contaminated wash water.
- Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up:
- Soak up with inert absorbent material.
- For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
- Clean up remaining materials from spill with suitable absorbent.
- Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
- Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: Use only with adequate ventilation.

Advice on safe handling: Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment. Take care to prevent spills, waste and minimize release to the environment.

Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage: Do not store with the following product types: Strong oxidizing agents

7.3 Specific end use(s)

Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>7695-91-2</td>
<td>TWA</td>
<td>5000 ug/m³ (OEB 1)</td>
<td>Internal</td>
</tr>
<tr>
<td>Vitamin A Palmitate</td>
<td>79-81-2</td>
<td>TWA</td>
<td>&gt;= 1 &lt; 10 ug/m³ (OEB 4)</td>
<td>Internal</td>
</tr>
<tr>
<td>Colecalciferol</td>
<td>67-97-0</td>
<td>TWA</td>
<td>5 µg/m³ (OEB 4)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Wipe limit: 50 µg/100 cm² Internal

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dl)-a-Tocopheryl</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic</td>
<td>73.5 mg/m³</td>
</tr>
<tr>
<td>acetate</td>
<td></td>
<td></td>
<td>effects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic</td>
<td>416.6 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>effects</td>
<td>bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic</td>
<td>21.7 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>effects</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
generated according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

Version 1.3
Revision Date: 09/13/2019
SDS Number: 4259335-00004
Date of last issue: 26.06.2019
Date of first issue: 06.05.2019

<table>
<thead>
<tr>
<th>Substance</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>Fresh water</td>
<td>0.27 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.027 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.27 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>100 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>212000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>21200 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>74800 mg/kg</td>
</tr>
<tr>
<td>Vitamin A Palmitate</td>
<td>Fresh water</td>
<td>0.1 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.01 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>1 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>595000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>5950000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>2100000 mg/kg</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Engineering measures**
Ensure adequate ventilation, especially in confined areas.
Minimize workplace exposure concentrations.

**Personal protective equipment**

Eye protection : Wear the following personal protective equipment:
Safety glasses
Equipment should conform to I.S. EN 166

Hand protection

Remarks : Wash hands before breaks and at the end of workday.
Skin and body protection : Skin should be washed after contact.
Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Organic vapour type (A)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Aqueous solution
Colour : yellow
Odour : characteristic
Odour Threshold : No data available
pH : No data available
### Melting point/freezing point
-5 °C

### Initial boiling point and boiling range
194 °C

### Flash point
244 °C

### Evaporation rate
No data available

### Flammability (solid, gas)
Not applicable

### Upper explosion limit / Upper flammability limit
No data available

### Lower explosion limit / Lower flammability limit
No data available

### Vapour pressure
No data available

### Relative vapour density
No data available

### Relative density
0.9 - 0.94

### Viscosity
- Viscosity, dynamic: 68.41 - 68.81 mPa.s (25 °C)
  Method: Brookfield
- Viscosity, kinematic: No data available

### Explosive properties
Not explosive

### Oxidizing properties
The substance or mixture is not classified as oxidizing.

### 9.2 Other information
- Flammability (liquids): Not applicable
- Molecular weight: No data available
- Particle size: Not applicable
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions: Can react with strong oxidizing agents.

10.4 Conditions to avoid
Conditions to avoid: None known.

10.5 Incompatible materials
Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Information on likely routes of exposure:
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity: LD50 (Rat): > 3,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Vitamin A Palmitate:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Remarks: Based on data from similar materials

Colecalciferol:
Acute oral toxicity: LD50 (Rat, male): 35 mg/kg
Acute inhalation toxicity: Acute toxicity estimate: 0.05 mg/l
Exposure time: 4 h
SAFETY DATA SHEET
according to Regulation (EO) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

Version 1.3 | Revision Date: 09/13/2019 | SDS Number: 4259335-00004 | Date of last issue: 26.06.2019
Date of first issue: 06.05.2019

Test atmosphere: dust/mist
Method: Expert judgement

Acute dermal toxicity
Acute toxicity estimate: 50 mg/kg
Method: Expert judgement

Skin corrosion/irritation
Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Vitamin A Palmitate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Mild skin irritation

Serious eye damage/eye irritation
Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

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

Colecalciferol:
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.

Components:

(dl)-a-Tocopheryl acetate:
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

Test Type: Draize Test
Exposure routes: Skin contact
Species: Humans
Result: negative

Vitamin A Palmitate:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Colecalciferol:
Test Type: Maurer optimisation test
Exposure routes: Skin contact
Species: Guinea pig
Result: negative

Germ cell mutagenicity
Not classified based on available information.

Components:
(dl)-a-Tocopheryl acetate:
Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Vitamin A Palmitate:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative

Colecalciferol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
SAFETY DATA SHEET  
according to Regulation (EC) No. 1907/2006

Multivitamin (with Soy Oil) Formulation

Version 1.3  Revision Date: 09/13/2019  SDS Number: 4259335-00004  Date of last issue: 26.06.2019  Date of first issue: 06.05.2019

Method: OECD Test Guideline 471  
Result: equivocal

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

Genotoxicity in vivo:

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative

Genotoxicity in vivo:

Test Type: In vivo mammalian alkaline comet assay  
Species: Rat  
Application Route: Ingestion  
Result: positive

Germ cell mutagenicity Assessment:

Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity:

Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:

Species: Rat  
Application Route: Ingestion  
Exposure time: 104 weeks  
Result: negative

Reproductive toxicity:

Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:

Effects on fertility:

Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on foetal development:

Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Ingestion  
Result: negative
Vitamin A Palmitate:
Effects on foetal development:
- Test Type: Embryo-foetal development
  - Species: Monkey
  - Application Route: Ingestion
  - Result: positive

Reproductive toxicity - Assessment:
- Clear evidence of adverse effects on development, based on animal experiments.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Components:

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

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

Repeated dose toxicity

Components:

(dl)-a-Tocopheryl acetate:
- Species: Rat
- NOAEL: 500 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days

Vitamin A Palmitate:
- Species: Rat
- NOAEL: 1.43 - 3.32 mg/kg
- Application Route: Ingestion
- Exposure time: 3 Months
- Remarks: Based on data from similar materials

Colecalciferol:
- Species: Rat
- NOAEL: 0.06 mg/kg
- LOAEL: 0.3 mg/kg
- Application Route: Ingestion
SECTION 12: Ecological information

12.1 Toxicity

Components:

(dl)-a-Tocopheryl acetate:

Toxicity to fish:
- LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203

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:
- ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201

  NOEC (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201

Toxicity to microorganisms:
- EC50: > 927 mg/l
  Exposure time: 30 min
  Method: ISO 8192

Toxicity to fish (Chronic toxicity):
- NOEC: 100 mg/l
  Exposure time: 28 d
  Species: Oncorhynchus mykiss (rainbow trout)

Vitamin A Palmitate:

Toxicity to fish:
- LC50 (Leuciscus idus (Golden orfe)): > 1,000 mg/l
  Exposure time: 96 h
  Method: DIN 38412
  Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates:
- EC50 (Daphnia magna (Water flea)): > 100 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
  Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants:
- EC50 (Desmodesmus subspicatus (green algae)): 152.94 mg/l
Exposure time: 72 h

**Colecalciferol:**
- Toxicity to fish: LL50 (Danio rerio (zebra fish)): > 100 mg/l
  - Exposure time: 96 h
  - Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates: EL50 (Daphnia magna (Water flea)): > 100 mg/l
  - Exposure time: 48 h
  - Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants: EL50 (Scenedesmus capricornutum (fresh water algae)): > 100 mg/l
  - Exposure time: 96 h
  - Method: OECD Test Guideline 201

### 12.2 Persistence and degradability

**Components:**

**(dl)-a-Tocopheryl acetate:**
- Biodegradability: Result: Not readily biodegradable.
  - Biodegradation: 21.7 - 31 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301C

**Vitamin A Palmitate:**
- Biodegradability: Result: Not readily biodegradable.
  - Biodegradation: 40 - 50 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301F

**Colecalciferol:**
- Biodegradability: Result: Not readily biodegradable.
  - Biodegradation: <= 7 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301C

### 12.3 Bioaccumulative potential

**Components:**

**Vitamin A Palmitate:**
- Partition coefficient: n-octanol/water: log Pow: > 6.2

**Colecalciferol:**
- Partition coefficient: n-octanol/water: log Pow: > 6.2
  - Method: OECD Test Guideline 107
12.4 Mobility in soil  
No data available

12.5 Results of PBT and vPvB assessment  
Not relevant

12.6 Other adverse effects  
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods  
Product : Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number  
Not regulated as a dangerous good

14.2 UN proper shipping name  
Not regulated as a dangerous good

14.3 Transport hazard class(es)  
Not regulated as a dangerous good

14.4 Packing group  
Not regulated as a dangerous good

14.5 Environmental hazards  
Not regulated as a dangerous good

14.6 Special precautions for user  
Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code  
Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture  
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable
REACH - List of substances subject to authorisation (Annex XIV) : Not applicable
Regulation (EC) No 1005/2009 on substances that de-
15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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

Full text of H-Statements

H300 : Fatal if swallowed.
H310 : Fatal in contact with skin.
H330 : Fatal if inhaled.
H360D : May damage the unborn child.
H372 : Causes damage to organs through prolonged or repeated exposure.
H413 : May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Chronic : Long-term (chronic) aquatic hazard
Repr. : Reproductive toxicity
STOT RE : Specific target organ toxicity - repeated exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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.

IE / EN