Manganese (IV) Oxide Powder

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier: Manganese dioxide
   CAS: 1313-13-9
   EC: 215-202-6
   Index: Non-applicable
   REACH: 01-2119452801-43-XXXX
   Formula: MnO₂
   Molecular weight: 86.94

1.2 Relevant identified uses of the substance or mixture and uses advised against:
   Relevant uses: Chemical sample for use in laboratories. For professional user/industrial user only.
   Uses advised against: All uses not specified in this section or in section 7.3

1.3 Details of the supplier of the safety data sheet:
   Scientific & Chemical Supplies Limited
   Carlton House, Livingstone Road
   WV14 0QZ Bilston - England
   Phone.: +44 (0) 1902 402402 - Fax: +44 (0) 1902 402343
   customerservices@scichem.com
   www.scichem.com

1.4 Emergency telephone number: +44 (0) 7919 258 784

SECTION 2: HAZARDS IDENTIFICATION **

2.1 Classification of the substance or mixture:
   CLP Regulation (EC) No 1272/2008:
   Classification of this product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.
   Acute Tox. 4: Acute toxicity, Category 4, H302+H332
   STOT RE 2: Specific target organ toxicity, repeated exposure, Category 2, H373

2.2 Label elements:
   CLP Regulation (EC) No 1272/2008:
   Warning
   Hazard statements:
   Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled
   STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure
   Precautionary statements:
   P260: Do not breathe dust/fume/gas/mist/vapours/spray
   P261: Avoid breathing dust/fume/gas/mist/vapours/spray
   P264: Wash thoroughly after handling
   P271: Use only outdoors or in a well-ventilated area
   P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing
   P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively

2.3 Other hazards:
   Product fails to meet PBT/vPvB criteria

** Changes with regards to the previous version

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:
   Chemical description: Inorganic compounds
   Components:
Manganese (IV) Oxide Powder

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Chemical name/Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 1313-13-9</td>
<td>Manganese dioxide</td>
<td>ATP CLP00</td>
</tr>
<tr>
<td>Index: Non-applicable</td>
<td>REACH01-2119452801-43-XXXX</td>
<td>80 - &lt;100 %</td>
</tr>
</tbody>
</table>

To obtain more information on the hazards of the substances consult sections 8, 11, 12, 15 and 16.

3.2 Mixture:
Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:
The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:
Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply, etc.) requiring immediate medical assistance.

By skin contact:
Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:
This product does not contain substances classified as hazardous for eye contact. Rinse eyes thoroughly for at least 15 minutes with lukewarm water, ensuring that the person affected does not rub or close their eyes.

By ingestion/aspiration:
Request medical assistance immediately, showing the SDS of this product. Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. In the case of loss of consciousness do not administer anything orally unless supervised by a doctor. Rinse out the mouth and throat, as they may have been affected during ingestion. Keep the person affected at rest.

4.2 Most important symptoms and effects, both acute and delayed:
Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed:
Non-applicable

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:
Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems. IT IS NOT RECOMMENDED to use tap water as an extinguishing agent.

5.2 Special hazards arising from the substance or mixture:
As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:
Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit, ...) in accordance with Directive 89/654/EC.

Additional provisions:
Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.
Manganese (IV) Oxide Powder

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
Sweep up and shovel product or collect by other means and place in container for reuse (preferred) or disposal

6.2 Environmental precautions:
This product is not classified as hazardous to the environment. Keep product away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up:
It is recommended:
Sweep up and shovel product or collect by other means and place in container for reuse (preferred) or disposal

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:
A.- Precautions for safe manipulation
Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used.
B.- Technical recommendations for the prevention of fires and explosions
Due to its non-flammable nature, the product does not present a fire risk under normal conditions of storage, handling and use.
C.- Technical recommendations to prevent ergonomic and toxicological risks
Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.
D.- Technical recommendations to prevent environmental risks
It is recommended to have absorbent material available at close proximity to the product (See subsection 6.3)

7.2 Conditions for safe storage, including any incompatibilities:
A.- Technical measures for storage
Store in a cool, dry, well-ventilated location
B.- General conditions for storage
Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):
Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:
Substances whose occupational exposure limits have to be monitored in the workplace (EH40/2005 Workplace exposure limits):
Nuisance dust: Inhalable dust 10 mg/m³ // Respirable dust 4 mg/m³

DNEL (Workers):

<table>
<thead>
<tr>
<th>Identification</th>
<th>Short exposure</th>
<th>Long exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systemic</td>
<td>Local</td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>Oral Non-applicable</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>CAS: 1313-13-9</td>
<td>Dermal Non-applicable</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>EC: 215-202-6</td>
<td>Inhalation Non-applicable</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

DNEL (General population):
### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

<table>
<thead>
<tr>
<th>Identification</th>
<th>Short exposure</th>
<th>Long exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systemic</td>
<td>Local</td>
</tr>
<tr>
<td>Manganese dioxide</td>
<td>Oral</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>CAS: 1313-13-9</td>
<td>Dermal</td>
<td>Non-applicable</td>
</tr>
<tr>
<td>EC: 215-202-6</td>
<td>Inhalation</td>
<td>Non-applicable</td>
</tr>
</tbody>
</table>

**PNEC:**

<table>
<thead>
<tr>
<th>Identification</th>
<th>STP</th>
<th>Fresh water</th>
<th>0.00014 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide</td>
<td>Soil</td>
<td>Marine water</td>
<td>0.000014 mg/L</td>
</tr>
<tr>
<td>CAS: 1313-13-9</td>
<td>Intermittent</td>
<td>Sediment (Fresh water)</td>
<td>0.037 mg/kg</td>
</tr>
<tr>
<td>EC: 215-202-6</td>
<td>Oral</td>
<td>Sediment (Marine water)</td>
<td>0.0037 mg/kg</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls:

**A. General security and hygiene measures in the work place**

In accordance with the order of importance to control professional exposure (Directive 98/24/EC) it is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding the occupational exposure limits. In case of using personal protective equipment it should have CE marking in accordance with Directive 89/686/EC. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,…) consult the information leaflet provided by the manufacturer. For additional information see subsection 7.1.

All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

**B. Respiratory protection**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**C. Specific protection for the hands**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**D. Ocular and facial protection**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**E. Body protection**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>PPE</th>
<th>Labelling</th>
<th>CEN Standard</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**F. Additional emergency measures**

---

Date of compilation: 10/06/2014            Revised: 17/04/2019            Version: 5 (Replaced 4)
### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

<table>
<thead>
<tr>
<th>Emergency measure</th>
<th>Standards</th>
<th>Emergency measure</th>
<th>Standards</th>
</tr>
</thead>
</table>

**Environmental exposure controls:**
In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

**Volatile organic compounds:**
With regard to Directive 2010/75/EU, this product has the following characteristics:
- **V.O.C. (Supply):** 0 % weight
- **V.O.C. density at 20 ºC:** 0 kg/m³ (0 g/L)
- **Average carbon number:** Non-applicable
- **Average molecular weight:** Non-applicable

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties:
For complete information see the product datasheet.

**Appearance:**
- Physical state at 20 ºC: Solid
- Appearance: Not available
- Colour: Black
- Odour: Odourless
- Odour threshold: Non-applicable *

**Volatility:**
- Boiling point at atmospheric pressure: Non-applicable *
- Vapour pressure at 20 ºC: Non-applicable *
- Vapour pressure at 50 ºC: Non-applicable *
- Evaporation rate at 20 ºC: Non-applicable *

**Product description:**
- Density at 20 ºC: 5210 kg/m³
- Relative density at 20 ºC: 5.21
- Dynamic viscosity at 20 ºC: Non-applicable *
- Kinematic viscosity at 20 ºC: Non-applicable *
- Kinematic viscosity at 40 ºC: Non-applicable *
- Concentration: Non-applicable *
- pH: Non-applicable *
- Vapour density at 20 ºC: Non-applicable *
- Partition coefficient n-octanol/water 20 ºC: Non-applicable *
- Solubility in water at 20 ºC: Non-applicable *
- Solubility properties: Insoluble
- Decomposition temperature: Non-applicable *
- Melting point/freezing point: Non-applicable *
- Explosive properties: Non-applicable *
- Oxidising properties: Non-applicable *

*Not relevant due to the nature of the product, not providing information property of its hazards.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>93 °C</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Autoignition temperature:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Explosive:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Lower explosive limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Upper explosive limit:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Surface tension at 20 °C:</td>
<td>Non-applicable *</td>
</tr>
<tr>
<td>Refraction index:</td>
<td>Non-applicable *</td>
</tr>
</tbody>
</table>

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:
No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7.

10.2 Chemical stability:
Chemically stable under the conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:
Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:
Applicable for handling and storage at room temperature:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Shock and friction</th>
<th>Contact with air</th>
<th>Increase in temperature</th>
<th>Sunlight</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10.5 Incompatible materials:

<table>
<thead>
<tr>
<th>Category</th>
<th>Acids</th>
<th>Water</th>
<th>Oxidising materials</th>
<th>Combustible materials</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid strong acids</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Avoid alkalis or strong bases</td>
</tr>
</tbody>
</table>

10.6 Hazardous decomposition products:
See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

The experimental information related to the toxicological properties of the product itself is not available.

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

A- Ingestion (acute effect):
- Acute toxicity: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

B- Inhalation (acute effect):
- Acute toxicity: Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
SECTION 11: TOXICOLOGICAL INFORMATION (continued)

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for skin contact. For more information see section 3.

- Contact with the eyes: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.

  IARC: Non-applicable

- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensitising effects. For more information see section 3.

- Cutaneous: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

- Specific target organ toxicity (STOT): Exposure in high concentration can interfere with the central nervous system causing headache, dizziness, vertigo, nausea, vomiting, confusion, and in serious cases, loss of consciousness.

- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT): Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

H- Aspiration hazard:

- Aspiration hazard: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.

Other information:

Non-applicable

Specific toxicology information on the substances:

<table>
<thead>
<tr>
<th>Identification</th>
<th>Acute toxicity</th>
<th>Genus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganese dioxide</td>
<td>LD50 oral 500 mg/kg (ATEi)</td>
<td></td>
</tr>
<tr>
<td>CAS: 1313-13-9</td>
<td>LD50 dermal Non-applicable</td>
<td></td>
</tr>
<tr>
<td>EC: 215-202-6</td>
<td>LC50 inhalation 1.5 mg/L (4 h) (ATEi)</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity:
Not available

12.2 Persistence and degradability:
Not available

12.3 Bioaccumulative potential:
Not available

12.4 Mobility in soil:
Not available

12.5 Results of PBT and vPvB assessment:
Product fails to meet PBT/vPvB criteria

12.6 Other adverse effects:
Not described
SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Waste class (Regulation (EU) No 1357/2014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 03 03*</td>
<td>inorganic wastes containing hazardous substances</td>
<td>Dangerous</td>
</tr>
</tbody>
</table>

Type of waste (Regulation (EU) No 1357/2014):
HP6 Acute Toxicity

Waste management (disposal and evaluation):
Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC, The Waste Regulations 2011, 2011 No. 988). As under 15 01 (2014/955/EU) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-dangerous residue. We do not recommended disposal down the drain. See paragraph 6.2.

Regulations related to waste management:
In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

SECTION 14: TRANSPORT INFORMATION

This product is not regulated for transport (ADR/RID,IMDG,IATA)

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:
Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Non-applicable
Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable
Regulation (EC) No 1005/2009, about substances that deplete the ozone layer: Non-applicable
Article 95, REGULATION (EU) No 528/2012: Non-applicable
REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable
Seveso III:
Non-applicable
Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc ....): Non-applicable

Specific provisions in terms of protecting people or the environment:
It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation:
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009), SI 2009 No 1348
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011, 2011 No. 1885
Control of Substances Hazardous to Health Regulations 2002 (as amended) EH40/2005 Workplace exposure limits
The Waste Regulations 2011, 2011 No. 988

15.2 Chemical safety assessment:
The supplier has not carried out evaluation of chemical safety.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:
SECTION 16: OTHER INFORMATION (continued)

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (Regulation (EC) No 2015/830)

Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks:

CLP Regulation (EC) No 1272/2008 (SECTION 2, SECTION 16):
- Precautionary statements

Texts of the legislative phrases mentioned in section 2:
H373: May cause damage to organs through prolonged or repeated exposure
H302+H332: Harmful if swallowed or if inhaled

Texts of the legislative phrases mentioned in section 3:
The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

CLP Regulation (EC) No 1272/2008:
Acute Tox. 4: H302+H332 - Harmful if swallowed or if inhaled

Advice related to training:
Minimal training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:
http://echa.europa.eu
http://eur-lex.europa.eu

Abbreviations and acronyms:
ADR: European agreement concerning the international carriage of dangerous goods by road
IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5-day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
LC50: Lethal Concentration 50
EC50: Effective concentration 50
Log-POW: Octanol-water partition coefficient
Koc: Partition coefficient of organic carbon