

# SAFETY DATA SHEET ACCORDING TO 1907/2006/EC, 453/2010/EU, 2015/830/EU (REACH)

## COPSTAR

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

- 1.1 Product Identifier**  
**Product Name** : COPSTAR  
**Product description** : Fertiliser  
**Product Type** : Suspension Concentrate
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**  
Relevant uses: Fungicide  
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**  
Rolfes Agri (Pty) Ltd  
288 Mundt Street  
Waltloo  
Pretoria  
South Africa  
Tel: +27(0)12 803 0145  
Fax: +27(0)12 803 8418
- 1.4 Emergency telephone number**  
**National advisory body/Poison Centre**  
**Telephone number** : SOUTH AFRICA  
Griffon Poison Information Centre  
(24 Hour Poisoning Emergency Helpline)  
+27(0)82 446 8946



## 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. 3: Acute Toxicity, Category 3, H301

Eye Irrit. 1: Eye Irritation, Category 2, H319

Acute Tox. 3: Acute Toxicity, Category 2, H331

Aquatic Acute 1: Aquatic Acute, Category 1, H400

Aquatic Chronic 1: Aquatic Chronic, Category 1, H410

### 2.2 Label elements

#### CLP Regulation (EC) no 1272/2008:

#### Hazard pictogram(s):



#### Signal word

: Danger

#### Hazard statement(s)

: H301 - Toxic if swallowed.

H319 - Causes serious eye irritation.

H331 - Toxic if inhaled

H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

#### Precautionary statement(s) :

P101 - If medical advice is needed, have product container or label at hand.

P102 - Keep out of reach of children.

P103 - Read label before use.

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 - Wash hands thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

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

P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P304+P340 - IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.

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

P311 - Call a POISON CENTER or doctor/physician.

P321 - Specific treatment (see Section 4 on this SDS).

P330 - Rinse mouth.

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

P391 - Collect spillage.

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

P405 - Store locked up.

P501 - Dispose of the contents/containers in accordance with the current legislation on waste treatment.

### 2.3 Other hazards

Non-applicable

## SECTION 3: Composition/information on ingredients

### 3.1 Substance:

Non-applicable

- 3.2 Mixture:**  
**Chemical description:** Copper Hydroxide + Additive & Inerts  
**Component(s):**

<b>Chemical Name:</b>	Copper dihydroxide Copper(II) hydroxide
<b>CAS:</b>	20427-59-2
<b>EC:</b>	243-815-9
<b>Index:</b>	029-021-00-3
<b>REACH:</b>	-
<b>Formulation:</b>	Copper Hydroxide 180 g/l (Equivalent to 120 g Copper/l)

## 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 to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Do NOT give mouth-to-mouth resuscitation if victim ingested or inhaled the substance. Keep person at rest and warm. Treat symptomatically and supportively as and when required. Obtain medical advice if necessary.

**By skin contact:**

Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists. Wash clothing before re-use.

**By eye contact:**

Immediately flush eyes with lukewarm water or saline solution for at least 15 minutes, lifting lower and upper eyelids occasionally. Check for and remove any contact lenses after 5 minutes. Get medical attention if necessary.

**By ingestion / aspiration:**

Have victim rinse mouth thoroughly with water. Give water to dilute the material if victim is alert and not convulsing. Induce vomiting immediately as directed by medical personnel. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomits, rinse mouth and administer more water. Never give anything by mouth to an unconscious person. Qualified medical personnel should perform administration of oxygen. Seek medical advice if necessary.

### 4.2 Most important symptoms and effects, both acute and delayed

No information available.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** : None.  
**Specific treatments** : Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1 Fire Extinguishing Media

**Suitable extinguishing media:**

Use dry chemical, Carbon Dioxide, foam or water mist or fog. If stored with other combustible products use water, CO<sub>2</sub> or dry chemical.

**Unsuitable extinguishing media:**

No information available.

**5.2 Special hazards arising from the substance or mixture****Hazards from the substance or mixture:**

If water is used, dike fire control water for later disposal. Keep away from streams or lakes.

**Hazardous thermal decomposition products:**

During fire, irritating and toxic gases will be released due to thermal decomposition or combustion.

**5.3 Additional provisions:**

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. In the event of a fire, wear full protective clothing and self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures:**

Ventilate area of leak or spill. Wear appropriate personal protective equipment.

**6.2 Environmental precautions:**

This product is classified as hazardous to the environment. Keep product away from drains, surface and underground water.

**6.3 Methods and materials for containment and cleaning up****Spills:**

Absorb with sand or other non-combustible absorbent material and put in a suitable container for reclamation or disposal.

**Large Spills:**

Dyke far ahead of liquid spills for later disposal. Prevent entry of the substance into waterways, sewers, basements or confined areas.

**6.4 Reference to other sections:**

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

**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, manipulation 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**

Minimum Temp.: 5 °C

Maximum Temp.: 30 °C

Maximum time: 36 Months

**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**

TWA: 1 (mg/m<sup>3</sup>) from ACGIH (TLV) [United States] - as copper dusts or mists. TWA: 1 (mg/m<sup>3</sup>) from OSHA (PEL) [United States] - as copper dusts or mists. Consult local authorities for acceptable exposure limits.

**8.2 Exposure controls**

**Appropriate engineering controls:**

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Individual protection measures**

**Hygiene measures:**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

**Eye/face protection:**

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Possible: safety glasses with side-shields

**Skin protection**

**Hand protection:**

Protective gloves against minor risks.

**Body protection:**

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection:**

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection:**

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

**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. No significant release into the air is expected.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

For complete information, please refer to product datasheet.

**Appearance**

Physical state

: Liquid Suspension

Colour : Blue  
 Odour : Pungent odour

**Volatility:**

Boiling point at atmospheric pressure : > 100°C  
 Vapour pressure at 20 °C : Non-applicable \*  
 Vapour pressure at 50 °C : Non-applicable \*  
 Evaporation rate at 20 °C : Non-applicable \*

**Product description:**

Density at 20 °C : 1.16  
 Relative density at 20 °C : Non-applicable \*  
 Dynamic viscosity at 20 °C : Non-applicable \*  
 Kinematic viscosity at 20 °C : Non-applicable \*  
 Kinematic viscosity at 40 °C : Non-applicable \*  
 pH : 9.32 @ 20.9 °C  
 Vapour density at 20 °C : Non-applicable \*  
 Partition coefficient n-octanol/water 20 °C : Non-applicable \*  
 Solubility in water at 20 °C : Soluble in water.  
 Solubility properties : Non-applicable \*  
 Decomposition temperature : Non-applicable \*  
 Melting point/freezing point : Non-applicable \*  
 Explosive properties : No explosive properties  
 Oxidising properties : Non-applicable \*

**Flammability:**

Flash Point : Non-applicable \*  
 Autoignition temperature : Non-applicable \*  
 Lower flammability limit : Non-applicable \*  
 Upper flammability limit : Non-applicable \*

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

**9.2 Other information:** No additional information.**SECTION 10: Stability and reactivity****10.1 Reactivity:**

Copper is corrosive to aluminium, especially when in aqueous state and elevated temperatures.

**10.2 Chemical stability:**

Chemically stable under the conditions of storage, handling and use.

**10.3 Possibility of hazardous reactions:**

Will not occur.

**10.4 Conditions to avoid:**

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid excessive heat.	Not applicable	Avoid exposure to high moisture conditions for prolonged periods.

**10.5 Incompatible materials:**

Acids	Water	Combustive materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Not applicable

- 10.6 Hazardous decomposition products:**  
Decomposes in high temperature to CuO+H<sub>2</sub>O.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

LD50 Oral (Rat): 1 440 mg/kg (Published data)  
LD50 Dermal (Rat): > 2020 mg/kg (Published data)  
LC50 Inhalation (Rat) > 1.59 mg/L (Published data)

**Dangerous health implications:**

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

A.- Ingestion (acute effect):

- Acute toxicity : Based on available data, the classification criteria are met. Refer to Section 2.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

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

- Contact with the skin Based on available data, the classification criteria are met. Refer to Section 2.
- Contact with the eyes: Based on available data, the classification criteria are met. Refer to Section 2.

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.
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

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

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

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

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

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect.

**Other information:**

Non-applicable

## SECTION 12: Ecological information

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

### 12.1 Toxicity:

Copper dihydroxide Copper(II) hydroxide			
	Acute toxicity	Species	Genus
LC50	0,023 mg/ℓ (96 h) 0,08 mg/ℓ (24 h) > 180 mg/ℓ (96 h)	Fathead Minnows Rainbow trout Bluegill sunfish	Fish
LC50	3 400 mg/kg > 5 000 mg/kg > 10 000 ppm > 10 000 ppm	Bobwhite quail Mallard duck Bobwhite Quail Mallard Duck	Bird
EC50	6.5ppm	Daphnia magna	Aquatic Invertebrates

#### Summary:

Toxic to fish and aquatic invertebrates and may contaminate water through runoff. This product has a potential for runoff for several months or more after application.

### 12.2 Persistence and degradability:

Copper is an inorganic compound that cannot be degraded in soils. Copper can be present under different forms, most of which are strongly bound to inorganic and organic ligands contained within soil and sediments. The fate and behaviour of copper, as its bio availability, strongly depend on the distribution of these different forms.

### 12.3 Bioaccumulative potential:

Copper is strongly bio-accumulated.

### 12.4 Mobility in soil:

Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

### 12.5 Results of PBT and vPvB assessment:

This substance/mixture does not meet the PBT and vPvB criteria of REACH regulation, annex XIII

### 12.6 Other adverse effects:

High concentration in receiving water will injure aquatic life.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

#### Methods of disposal:

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

#### Hazardous waste:

No information available.











**Packaging****Methods of disposal:**

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions:**

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**SECTION 14: Transport information**

	Land transport (ADR/RID)	Inland waterway transport (AND/ADNR)	Sea Transport (IMDG)	Air transport (ICAO-TI / IATA- DGR)
14.1 UN Number	3082	3082	3082	3082
14.2 UN proper shipping name	Environmentally hazardous substance, liquid, N.O.S (Copper dihydroxide Copper(II) hydroxide)	Environmentally hazardous substance, liquid, N.O.S (Copper dihydroxide Copper(II) hydroxide)	Environmentally hazardous substance, liquid, N.O.S (Copper dihydroxide Copper(II) hydroxide)	Environmentally hazardous substance, liquid, N.O.S (Copper dihydroxide Copper(II) hydroxide)
14.3 Transport hazard class(es)	9 	9 	9 	9 
14.4 Packing group	III	III	III	III
14.5 Environmental hazards	Yes 	Yes 	Yes 	Yes 
14.6 Special precautions for user	No data available	No data available	No data available	No data available
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:	No data available	No data available	No data available	No data available

**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) 1907/2006 (REACH): Non-applicable  
 Regulation (EC) 1005/2009, about substances that deplete the ozone layer: Non-applicable  
 Active substances not included in Annex I under Regulation (EU) No 528/2012: Non-applicable  
 REGULATION (EU) No 689/2012, in relation to the import and export of hazardous chemical products: Non-applicable

**Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH,etc ....):**

Non-applicable

**Other legislation:**

Law No.360 / 2003 on the dangerous substances and preparations

Law nr.349 / 2007 regarding the reorganization of the institutional framework for chemicals management

Law no.249 / 2011 to amend article 4 of Law nr.349 / 2007 on the reorganization of the institutional framework chemicals management

Government Decision no. 477/2009 on the establishment of penalties for infringements of the provisions of Regulation (EC) No. 1.907 / 2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45 / EC and repealing Regulation (EEC) No. 793/93 and Regulation (EC) no. 1.488 / 94 Commission and Council Directive 76/769 / EEC and Directives 91/155 / EEC, 93/67 / EEC, 93/105 / EC and 2000/21 / EC Commission Law no.254 / 2011 amending article 26 of Law No.360 / 2003 on the preparations and substances dangerous GD nr.662 / 2011 repealing Government Decision no. 347/2003 regarding restrictions on the marketing and use of certain dangerous substances and preparations.

Emergency Ordinance no.60 / 2013 for completing art. 4 para. (1) of Law no. 349/2007 on the reorganization framework institutional management of chemicals GD Nr.1408 / 2008 and Annexes 1-6 on classification, packaging and labeling of dangerous substances GD nr.937 / 2010 and Annexes 1 to 5 on the classification, packaging and labeling in the marketing of dangerous preparations

GD no.122 / 2010 on the penalties applicable to infringements of the provisions of Regulation (EC) no.1272 / 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548 / EEC and 1999/45 / EC, and amending Regulation (EC) no.1907 / 2006

GD no.398 / 2010 establishing measures to enforce the provisions of Regulation (EC) nr.1272 / 2008 on classification, labeling and packaging of substances and mixtures.

Decision no. 1218/2006 establishing minimum safety requirements for ensuring occupational health and protection workers from risks related to chemical agents.

Law no. 319/2006 - Law on safety and health at work

GD 621/2005 on the management of packaging and packaging waste.

GD 1872/2006 amending and supplementing Government Decision 621/2005 on the management of packaging and packaging waste

The Waste Regulations 2011, 2011 No. 988.

**Specific provisions in terms of protecting people or the environment:**

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of the local circumstances in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

**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:**

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) N° 1907/2006 (Regulation (EU) N° 453/2010, Regulation (EC) N° 2015/830)

**Modifications related to the previous security card which concerns the ways of managing risks. :**

Non-applicable

**Texts of the legislative phrases mentioned in section 2:**

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.

**Texts of the legislative phrases mentioned in section 3:**

Non-applicable

**CLP Regulation (EC) n° 1272/2008:**

Acute Tox. 3: Acute Toxicity, Category 3, H301  
Eye Irrit. 1: Eye Irritation, Category 2, H319  
Acute Tox. 3: Acute Toxicity, Category 2, H331  
Aquatic Acute 1: Aquatic Acute, Category 1, H400  
Aquatic Chronic 1: Aquatic Chronic, Category 1, H410

**Classification procedure:**

Non-applicable

**Advice related to training:**

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

**Principal bibliographical sources:**

<http://esis.jrc.ec.europa.eu>  
<http://echa.europa.eu>  
<http://eur-lex.europa.eu>

**Relevant P-, H- and EUH-phrases (number and full text)**

H301 - Toxic if swallowed.  
H319 - Causes serious eye irritation.  
H331 - Toxic if inhaled  
H400 - Very toxic to aquatic life.  
H410 - Very toxic to aquatic life with long lasting effects.  
P101 - If medical advice is needed, have product container or label at hand.  
P102 - Keep out of reach of children.  
P103 - Read label before use.  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 - Wash hands thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves/face shield/eye protection.  
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
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P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do, continue rinsing.  
P311 - Call a POISON CENTER or doctor/physician.  
P321 - Specific treatment (see Section 4 on this SDS).  
P330 - Rinse mouth.  
P337+P313 - IF eye irritation persists: Get medical advice/attention.  
P391 - Collect spillage.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of the contents/containers in accordance with the current legislation on waste treatment.

**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  
CL50: Lethal Concentration 50  
EC50: Effective concentration 50  
Log-POW: Octanol–water partition coefficient  
KOC: PARTITION COEFFICIENT OF ORGANIC CARBON

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**Notice to reader**

**DISCLAIMER AND LIMITATION OF LIABILITY**

The information and recommendations contained in this Safety Data Sheet ("SDS") relate only to the specific material referred to herein (the "Material") and do not relate to the use of such Material in combination with any other material or process. The information and recommendations contained herein are believed to be current and correct as of the date of this SDS. **HOWEVER, THE INFORMATION AND RECOMMENDATIONS ARE PRESENTED WITHOUT WARRANTY, REPRESENTATION OR LICENSE OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO THEIR ACCURACY, CORRECTNESS OR COMPLETENESS, AND THE SELLER, SUPPLIER AND MANUFACTURER OF THE MATERIAL AND THEIR RESPECTIVE AFFILIATES (COLLECTIVELY, THE "SUPPLIER") DISCLAIM ALL LIABILITY FOR RELIANCE ON SUCH INFORMATION AND RECOMMENDATIONS.**

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