

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifiers**Product name: **Zinc oxide**CAS-No.: **1314-13-2**Product Number: **A72461****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR,

UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 Emergency telephone numberEmergency Phone #: **+44 (0)845 1200 506****2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****According to Regulation (EC) No1272/2008;** Acute aquatic toxicity (Category 1), Chronic aquatic toxicity (Category 1)**According to European Directive 67/548/EEC as amended:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.**2.2 Label elements**

Pictogram

Signal word **Warning****Hazard statement(s):** H410 Very toxic to aquatic life with long lasting effects.**Precautionary statement(s):** P273 Avoid release to the environment. P501 Dispose of contents/container to an approved waste disposal plant.**Hazard symbol(s):****R-phrase(s):** R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases(s): S60 This material and its container must be disposed of as hazardous waste. S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

2.3 Other hazards – no data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Zinc oxide

Formula: ZnO
Molecular Weight: 81.39
CAS-No.: 1314-13-2
EC-No.: 215-222-5
Index-No.: 030-013-00-7

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact: Wash off with soap and plenty of water.

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

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed: no data available

4.3 Indication of immediate medical attention and special treatment needed: no data available

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture: no data available

5.3 Precautions for fire-fighters: Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information: no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Avoid dust formation. Ensure adequate ventilation.

6.2 Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections: For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses: no data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters: Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Safety glasses

Skin protection: The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Body Protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | | |
|--|--|----------------------|
| a) Appearance: | Form: Powder | Colour: White |
| b) Odour: | no data available | |
| c) Odour Threshold: | no data available | |
| d) pH: | no data available | |
| e) Melting/freezing point: | Melting point/range: no data available | |
| f) Initial boiling point and boiling range: | no data available | |
| g) Flash point: | no data available | |
| h) Evaporation rate: | no data available | |
| i) Flammability (solid, gas): | no data available | |
| j) Upper/lower flammability or explosive limits: | no data available | |
| k) Vapour pressure: | no data available | |
| l) Vapour density: | no data available | |
| m) Relative density: | 5.610 g/cm ³ | |
| n) Water solubility: | no data available | |
| o) Partition coefficient: n-octanol/water: | no data available | |
| p) Autoignition temperature: | no data available | |

- q) Decomposition temperature: no data available
r) Viscosity: no data available
s) Explosive properties: no data available
t) Oxidizing properties: no data available
9.2 Other safety information: no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity: no data available

10.2 Chemical stability: Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions: no data available

10.4 Conditions to avoid: no data available

10.5 Incompatible materials: Strong oxidizing agents

10.6 Hazardous decomposition products: formed under fire conditions. - Zinc/zinc oxides

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: LD50 Oral - mouse - 7,950 mg/kg

LC50 Inhalation - mouse - 2,500 mg/m³

Skin corrosion/irritation: Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation: Eyes - rabbit - Mild eye irritation - 24 h

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Genotoxicity in vitro - Hamster – Embryo. Unscheduled DNA synthesis. Morphological transformation. Sister chromatid exchange

Genotoxicity in vivo - guinea pig – Inhalation. Unscheduled DNA synthesis

Carcinogenicity: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity: Developmental Toxicity - rat – Oral. Specific Developmental Abnormalities: Homeostasis Effects on Newborn: Stillbirth. Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Zinc oxide dust or fume can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called oxide pox. Exposure to high levels of

dust or fume can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain, and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin., prolonged or repeated exposure can cause:, Reversible liver enzyme abnormalities., Diarrhoea

Additional Information: RTECS: ZH4810000

12. ECOLOGICAL INFORMATION

12.1 Toxicity: Toxicity to fish LC50 - *Oncorhynchus mykiss* (rainbow trout) - 1.1 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates.

EC50 - *Daphnia magna* (Water flea) - 0.098 mg/l - 48 h

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: no data available

12.6 Other adverse effects: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN-Number

ADR/RID: 3077 IMDG: 3077 IATA: 3077

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)

14.3 Transport hazard class(es)

ADR/RID: 9 IMDG: 9 IATA: 9

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for users: EMS-No: F-A, S-F

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture: no data available

15.2 Chemical Safety Assessment: no data available

16. OTHER INFORMATION

Aquatic Acute Acute aquatic toxicity

Aquatic Chronic Chronic aquatic toxicity

H410 Very toxic to aquatic life with long lasting effects.

N Dangerous for the environment

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.