

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 11/09/2012

1 Identification

Product identifier
Product name: Zinc oxide
Stock number: 44299

CAS Number:

1314-13-2

EC number:

215-222-5

Index number:

030-013-00-7

Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

The substance is not classified as hazardous to health or the environment according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC


N; Dangerous for the environment

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

Information concerning particular hazards for human and environment: Not applicable

Hazards not otherwise classified No information known.

Label elements
Labelling according to Regulation (EC) No 1272/2008 Not applicable

Hazard pictograms Not applicable

Signal word Not applicable

Hazard statements Not applicable

WHMIS classification Not controlled

Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

HEALTH	1
FIRE	0
REACTIVITY	0

Health (acute effects) = 1

Flammability = 0

Physical Hazard = 0

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

1314-13-2 Zinc oxide

Identification number(s):
EC number: 215-222-5

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4 First-aid measures**Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures**Extinguishing media****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Metal oxide fume

Advice for firefighters**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

Methods and material for containment and cleaning up: Pick up mechanically.

Prevention of secondary hazards: No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires: The product is not flammable

Conditions for safe storage, including any incompatibilities**Storage**

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

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Control parameters**Components with limit values that require monitoring at the workplace:****1314-13-2 Zinc oxide (100.0%)**

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction and fume
REL (USA)	Short-term value: 10** mg/m ³ Long-term value: 5* 5** mg/m ³ Ceiling limit value: 15* mg/m ³ *dust only **fume
TLV (USA)	Short-term value: 10* mg/m ³ Long-term value: 2* mg/m ³ *as respirable fraction
EL (Canada)	Short-term value: 10 mg/m ³ Long-term value: 2 mg/m ³
EV (Canada)	Short-term value: 10 mg/m ³ Long-term value: 2 mg/m ³ respirable

Additional information: No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.**Recommended filter device for short term use:**

Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Material of gloves: Nitrile rubber, NBR**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Powder
Color:	White
Odor:	Odorless
Odor threshold:	Not determined.

pH-value: Not applicable.**Change in condition**

Melting point/Melting range:	1975 °C (3587 °F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.

Danger of explosion: Not determined.**Explosion limits:**

Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	5.606 g/cm ³ (46.782 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.

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Evaporation rate	Not applicable.
Solubility in / Miscibility with Water:	Insoluble
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity No information known.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
 Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions Reacts with strong oxidizing agents
Incompatible materials: Oxidizing agents
Hazardous decomposition products: Metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity:
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effects known.
Germ cell mutagenicity:
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
Carcinogenicity: EPA-II: Inadequate information to assess carcinogenic potential.
Reproductive toxicity:
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Additional toxicological information:
 To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
General notes:
 Do not allow product to reach ground water, water course or sewage system.
 Do not allow material to be released to the environment without proper governmental permits.
 Danger to drinking water if even small quantities leak into the ground.
 Also poisonous for fish and plankton in water bodies.
 May cause long lasting harmful effects to aquatic life.
 Avoid transfer into the environment.
 Very toxic for aquatic organisms
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

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Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, ADR, IMDG, IATA UN3077

UN proper shipping name

 DOT Environmentally hazardous substances, solid, n.o.s. (Zinc oxide)
 ADR 3077 Environmentally hazardous substances, solid, n.o.s. (Zinc oxide)
 IMDG ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide), MARINE POLLUTANT
 IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)

Transport hazard class(es)

DOT, IMDG, IATA


Class 9 Miscellaneous dangerous substances and articles.

Label 9
 ADR

Class 9 (M7) Miscellaneous dangerous substances and articles

Label 9

Packing group

DOT, ADR, IMDG, IATA III

Environmental hazards:
Marine pollutant (IMDG): Yes (P)
 Symbol (fish and tree)
Special marking (ADR): Symbol (fish and tree)
Special marking (IATA): Symbol (fish and tree)

Special precautions for user Warning: Miscellaneous dangerous substances and articles

Danger code (Kemler): 90

EMS Number: F-A,S-F

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:
DOT
Marine Pollutant (DOT): No
Remarks: Special marking with the symbol (fish and tree).

UN "Model Regulation": UN3077, Environmentally hazardous substances, solid, n.o.s. (Zinc oxide), 9, III

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15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)

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California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substances of very high concern (SVHC) according to REACH, Article 57

Substance is not listed.

REACH - Pre-registered substances Substance is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Health, Safety and Environmental Department.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

P: Marine Pollutant

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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