

## MATERIAL SAFETY DATA SHEET

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Version 1.3

## Section 1 - Product and Company Information

Product Name ZINC OXIDE, 99+%, A.C.S. REAGENT  
Product Number 251607  
Brand ALDRICH

Company Sigma-Aldrich  
Street Address 3050 Spruce Street  
City, State, Zip, Country SAINT LOUIS MO 63103 US  
Technical Phone: 314 771 5765  
Emergency Phone: 414 273 3850 Ext. 5996  
Fax: 800 325 5052

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
ZINC OXIDE	1314-13-2	Yes

Formula ZnO  
Synonyms Actox 14 \* Actox 16 \* Actox 216 \* AI3-00277 \*  
Akro-zinc bar 85 \* Akro-zinc bar 90 \* Amalox \*  
Azo-33 \* Azo-55 \* Azo-66 \* Azo-77 \* Azodox-55 \*  
Azodox-55TT \* Azo-55TT \* Azo-66TT \* Azo-77TT \*  
Cadox XX 78 \* Chinese White \* C.I. 77947 \* C.I.  
Pigment White 4 \* Cynku tlenek (Polish) \* Electox  
2500 \* Emanay zinc oxide \* EMAR \* Felling zinc  
oxide \* Flowers of zinc \* GIAP 10 \* Green seal-8  
\* Hubbuck's White \* Kadox 15 \* Kadox-25 \* Kadox  
72 \* K-Zinc \* Outmine \* Ozide \* Ozlo \* Permanent  
White \* Philosopher's wool \* Powder base 900 \*  
Protox type 166 \* Protox type 167 \* Protox type  
168 \* Protox type 169 \* Protox type 267 \* Protox  
type 268 \* Red Seal 9 \* Snow White \* Unichem ZO \*  
Vandem VAC \* Vandem VOC \* White seal-7 \* XX 78 \*  
XX 203 \* XX 601 \* Zinca 20 \* Zincite \* Zincoid \*  
Zinc oxide (ACGIH:OSHA) \* Zinc oxide fume (OSHA)  
\* Zinc White \* ZN-0401 E 3/16'' \* Zn 0701T

RTECS Number: ZH4810000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Harmful.

Harmful by inhalation.

## HMIS RATING

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

## NFPA RATING

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

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#### Section 4 - First Aid Measures

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##### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

##### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

##### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

##### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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#### Section 5 - Fire Fighting Measures

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##### FLASH POINT

N/A

##### AUTOIGNITION TEMP

N/A

##### FLAMMABILITY

N/A

##### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

##### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

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#### Section 6 - Accidental Release Measures

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##### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

##### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

##### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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#### Section 7 - Handling and Storage

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##### HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes,



Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Zinc/zinc oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

### 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 exposure can cause: Reversible liver

enzyme abnormalities. Diarrhea, peptic ulceration and

gastrointestinal hemorrhage may also occur.

### TOXICITY DATA

Oral

Human

500 mg/kg

LDLO

Intraperitoneal

Rat

240 MG/KG

LD50

Oral

Mouse

7950 mg/kg

LD50

Inhalation  
Mouse  
2,500 mg/m3  
LC50

#### IRRITATION DATA

Skin  
Rabbit  
500 mg  
24H  
Remarks: Mild irritation effect

Eyes  
Rabbit  
500 mg  
24H  
Remarks: Mild irritation effect

#### CHRONIC EXPOSURE - TERATOGEN

Species: Rat  
Dose: 6846 MG/KG  
Route of Application: Oral  
Exposure Time: (1-22D PREG)  
Result: Specific Developmental Abnormalities: Homeostasis  
Effects on Newborn: Stillbirth. Effects on Newborn: Growth  
statistics (e.g., reduced weight gain).

#### CHRONIC EXPOSURE - MUTAGEN

Species: Rat  
Route: Inhalation  
Dose: 100 UG/M3  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 1 MG/L  
Cell Type: Embryo  
Mutation test: Morphological transformation.

Species: Hamster  
Dose: 1 MG/L  
Cell Type: Embryo  
Mutation test: Unscheduled DNA synthesis

Species: Hamster  
Dose: 300 UG/L  
Cell Type: Embryo  
Mutation test: Sister chromatid exchange

Species: Guinea pig  
Route: Inhalation  
Dose: 5300 UG/M3/3H/6D  
Mutation test: Unscheduled DNA synthesis

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Section 12 - Ecological Information

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Section 13 - Disposal Considerations

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APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: None  
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

### IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

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## Section 15 - Regulatory Information

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### EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 20  
Risk Statements: Harmful by inhalation.  
S: 7/9  
Safety Statements: Keep container tightly closed and in well-ventilated place.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
Risk Statements: Harmful by inhalation.  
Safety Statements: Keep container tightly closed and in well-ventilated place.

### UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes  
DEMINIMIS: 1 %  
NOTES: This product is subject to SARA section 313 reporting requirements - zinc compounds.  
TSCA INVENTORY ITEM: Yes

### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.  
DSL: Yes  
NDSL: No

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## Section 16 - Other Information

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### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.  
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