

# SAFETY DATA SHEET

Version 6.14  
Revision Date 03/02/2024  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Zinc  
Product Number : 209988  
Brand : Aldrich  
Index-No. : 030-001-01-9  
CAS-No. : 7440-66-6

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances  
Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES  
Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Combustible dust,  
Short-term (acute) aquatic hazard (Category 1), H400  
Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Warning

Hazard Statements

May form combustible dust concentrations in air.  
Very toxic to aquatic life with long lasting effects.

H410

Precautionary Statements

P273

Avoid release to the environment.

P391

Collect spillage.

P501

Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : Zn  
Molecular weight : 65.39 g/mol  
CAS-No. : 7440-66-6  
EC-No. : 231-175-3  
Index-No. : 030-001-01-9

Component	Classification	Concentration
<b>zinc powder, zinc dust stabilized</b>		
	Aquatic Acute 1; Aquatic Chronic 1; H400, H410 M-Factor - Aquatic Acute: 1 M-Factor - Aquatic Chronic: 1	<= 100 %
<b>Zinc oxide</b>		
	Aquatic Acute 1; Aquatic Chronic 1; H400, H410 M-Factor - Aquatic Acute: 1 M-Factor - Aquatic Chronic: 1	>= 1 - < 5 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## **SECTION 4: First aid measures**

### **4.1 Description of first-aid measures**

No data available

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## **SECTION 5: Firefighting measures**

### **5.1 Extinguishing media**

#### **Suitable extinguishing media**

Special powder against metal fire Sand Cement

#### **Unsuitable extinguishing media**

Water Foam

### **5.2 Special hazards arising from the substance or mixture**

Zinc/zinc oxides

Combustible.

### **5.3 Advice for firefighters**

No data available

### **5.4 Further information**

No data available

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

For personal protection see section 8.

### **6.2 Environmental precautions**

No data available

### **6.3 Methods and materials for containment and cleaning up**

No data available

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

For precautions see section 2.2.

## **7.2 Conditions for safe storage, including any incompatibilities**

Handle and store under inert gas. Air and moisture sensitive.

### **Storage class**

Storage class (TRGS 510): 11: Combustible Solids

## **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Zinc oxide	1314-13-2	TWA	2 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		STEL	10 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		TWA	5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	5 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		ST	10 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		C	15 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	5 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		PEL	5 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		STEL	10 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## 8.2 Exposure controls

### Personal protective equipment

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### **Control of environmental exposure**

Prevent product from entering drains.

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## **SECTION 9: Physical and chemical properties**

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

a) Appearance	Form: Dust Color: dark gray
b) Odor	odorless
c) Odor Threshold	Not applicable
d) pH	Not applicable
e) Melting point/freezing point	Melting point/range: 420 °C (788 °F) - lit.
f) Initial boiling point and boiling range	907 °C 1665 °F - lit.
g) Flash point	( )Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	May form combustible dust concentrations in air.
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	1.33 hPa at 487 °C (909 °F)
l) Vapor density	No data available
m) Density	7.133 g/cm <sup>3</sup> at 25 °C (77 °F) - lit.
Relative density	6.922 °C
n) Water solubility	0.0001 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - slightly soluble
o) Partition coefficient: n-octanol/water	Not applicable for inorganic substances
p) Autoignition temperature	does not ignite
q) Decomposition	No data available

temperature

- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties none

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

Contains the following stabilizer(s):

Zinc oxide ( $\leq 33\%$ )

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents, Acids and bases

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Acute toxicity estimate Oral - 2,500 mg/kg

(Calculation method)

LD50 Oral - Rat - male and female -  $> 2,000$  mg/kg (zinc powder, zinc dust stabilized)

(OECD Test Guideline 401)

Acute toxicity estimate Inhalation - 4 h - 5.41 mg/l - dust/mist (Calculation method)

LC50 Inhalation - Rat - male and female - 4 h -  $> 5.41$  mg/l - dust/mist

(zinc powder, zinc dust stabilized)

(OECD Test Guideline 403)

Acute toxicity estimate Dermal -  $> 5,000$  mg/kg

(Calculation method)

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit (zinc powder, zinc dust stabilized)

Result: No skin irritation - 5 d

Remarks: (in analogy to similar products)  
(ECHA)

The value is given in analogy to the following substances: Zinc oxide

**Serious eye damage/eye irritation**

Eyes - Rabbit (zinc powder, zinc dust stabilized)

Result: No eye irritation - 24 h

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig (zinc powder, zinc dust stabilized)

Result: negative

(OECD Test Guideline 406)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Zinc oxide

**Germ cell mutagenicity**

Test Type: Ames test

(zinc powder, zinc dust stabilized)

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Zinc sulphate  
Test Type: In vitro mammalian cell gene mutation test

(zinc powder, zinc dust stabilized)

Test system: mouse lymphoma cells

Metabolic activation: without metabolic activation

Result: negative

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: zinc chloride  
Test Type:

Chromosome aberration test in vitro

(zinc powder, zinc dust stabilized)

Test system: Other cell types

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: zinc chloride (zinc powder, zinc dust stabilized)

Test Type: Micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Intraperitoneal

Result: negative

Remarks: (in analogy to similar products)

(ECHA)



The value is given in analogy to the following substances: Zinc sulphate

### **Carcinogenicity**

- IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

### **Reproductive toxicity**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

## **11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 31.52 mg/kg - LOAEL (Lowest observed adverse effect level) - 53.8 mg/kg

(zinc powder, zinc dust stabilized)

RTECS: ZG8600000

Effects due to ingestion may include:, chills, dry throat, sweet taste, Fever, Cough, Nausea, Vomiting, Weakness, Contact with eyes or skin may cause:, Irritation (zinc powder, zinc dust stabilized)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (zinc powder, zinc dust stabilized)

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

Toxicity to fish	flow-through test LC50 - other fish - 0.439 mg/l - 96 h (zinc powder, zinc dust stabilized) Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Ceriodaphnia dubia (water flea) - 0.155 mg/l - 48 h (zinc powder, zinc dust stabilized) (US-EPA)
Toxicity to algae	static test NOEC - Pseudokirchneriella subcapitata (green algae) - 0.05 mg/l - 3 d (zinc powder, zinc dust stabilized) (OECD Test Guideline 201)
Toxicity to bacteria	static test NOEC - activated sludge - 0.1 mg/l - 4 h (zinc powder, zinc dust stabilized)

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(ISO 9509)  
Remarks: (in analogy to similar products)

Toxicity to fish(Chronic toxicity) flow-through test NOEC - other fish - 0.169 mg/l - 30 d (zinc powder, zinc dust stabilized)  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) semi-static test NOEC - Daphnia magna (Water flea) - 0.100 mg/l - 3 Weeks (zinc powder, zinc dust stabilized)  
Remarks: (ECHA)

### 12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

### 12.3 Bioaccumulative potential

Substance is not persistent, bioaccumulative, and toxic (PBT).

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### DOT (US)

UN number: 3077 Class: 9 Packing group: III  
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (zinc powder, zinc dust stabilized, Zinc oxide)  
Reportable Quantity (RQ): 1030 lbs  
Poison Inhalation Hazard: No

### IMDG

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UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc powder, zinc dust stabilized, Zinc oxide)  
Marine pollutant : yes  
Marine pollutant : no

**IATA**

UN number: 3077 Class: 9 Packing group: III  
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (zinc powder, zinc dust stabilized, Zinc oxide)

**Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

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**SECTION 15: Regulatory information**

**SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
zinc powder, zinc dust stabilized	7440-66-6	1993-02-16
Zinc oxide	1314-13-2	2007-03-01

**SARA 311/312 Hazards**

No SARA Hazards

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
zinc powder, zinc dust stabilized	7440-66-6	1993-02-16
Zinc oxide	1314-13-2	2007-03-01

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
zinc powder, zinc dust stabilized	7440-66-6	1993-02-16
Zinc oxide	1314-13-2	2007-03-01

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**SECTION 16: Other information**

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

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