

Material Safety Data Sheet



Zinc Oxide 72%

1. Product and company identification

Common name : Zinc Oxide 72%
Material uses : Included in animal feeds.
Supplier/Manufacturer : Pestell Minerals & Ingredients
141 Hamilton Road
New Hamburg, Ontario
Canada, N3A 2H1
Tel : (519) 662-2877
Fax : (519) 662-6242
E-mail: pestellgroup@pestell.com
In case of emergency : CANUTEC (613) 996-6666
MSDS authored by: : Kemika XXI Inc. + 1-450-435-7475

June 3, 2009

2. Hazards identification

Physical state : Solid. (Powder.)
Color : Gray / brown.
Hazard status : This material is classified hazardous under OSHA regulations in the United States and the WHMIS Controlled Product Regulation in Canada.
Emergency overview : WARNING !
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
LUNGS, RESPIRATORY TRACT, SKIN.
Not applicable.
Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects
Eyes : No known significant effects or critical hazards.
Skin : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.
Potential chronic health effects : Carcinogenic effects Classified A4 (Not classifiable for humans or animals.) by ACGIH [Zinc oxide].
Mutagenic effects Not available.
Teratogenic effects Not available.
Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated or prolonged exposure to the substance can produce target organ damage.
See toxicological information (section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
Zinc oxide	1314-13-2	60 - 100
Zinc	7440-66-6	0.5 - 1



Canada

Name	CAS number	%
Zinc oxide	1314-13-2	60 - 100
Zinc	7440-66-6	0.5 - 1

4 . First aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
- Skin contact** : Wash with soap and water. Get medical attention if symptoms occur.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

5 . Fire-fighting measures

- Flammability of the product** : Non-flammable.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : No specific hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

7 . Handling and storage

- Handling** : Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

8 . Exposure controls/personal protection

United States

Product name

Zinc oxide

Exposure limits**ACGIH TLV (United States, 1/2005).**STEL: 10 mg/m³ 15 minute(s). Form: All forms.TWA: 2 mg/m³ 8 hour(s). Form: All forms.**NIOSH REL (United States, 12/2001).**CEIL: 15 mg/m³ Form: DustSTEL: 10 mg/m³ 15 minute(s). Form: FumeTWA: 5 mg/m³ 10 hour(s). Form: Dust and fumes**OSHA PEL (United States, 8/1997).**TWA: 5 mg/m³ 8 hour(s). Form: Fume

Zinc	<p>TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction TWA: 15 mg/m³ 8 hour(s). Form: Total dust ACGIH (United States). TLV: 5 mg/m³ Form: Dust OSHA (United States). PEL: 5 mg/m³ Form: Dust</p>
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Canada

Product name Zinc oxide	Exposure limits ACGIH TLV (United States, 1/2005). STEL: 10 mg/m ³ 15 minute(s). Form: All forms. TWA: 2 mg/m ³ 8 hour(s). Form: All forms.
Zinc	ACGIH (United States). TLV: 5 mg/m ³ Form: Dust

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control airborne levels. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

- Eyes** : Safety glasses.
- Skin** : Lab coat.
- Respiratory** : A respirator is not needed under normal and intended conditions of use.
- Hands** : Disposable vinyl gloves.



HMIS Code/Personal protective equipment : A

Personal protection in case of a large spill : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Hygiene measures : Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. Follow good industrial hygiene practice.

9 . Physical and chemical properties

Physical state	: Solid. (Powder.)
Color	: Gray / brown.
pH	: 6.7 (Conc. (% w/w): 10) [Neutral.]
Melting/freezing point	: >1300°C (2372°F)
Relative density	: 5.067 (Water = 1)
Solubility	: Insoluble in cold water, hot water.

10 . Stability and reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: Reactive with oxidizing materials and acids.
Hazardous polymerization	: Will not occur.
Conditions of reactivity	: Not available.

11 . Toxicological information

Toxicity data

Product/ingredient name	Test	Result	Route	Species
Zinc oxide	LD50	7950 mg/kg	Oral	Mouse
	LC50	2500 mg/m ³ (4 hour(s))	Inhalation	Mouse

Acute Effects

- Eyes** : No known significant effects or critical hazards.
- Skin** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Potential chronic health effects** : Carcinogenic effects: Classified A4 (Not classifiable for humans or animals.) by ACGIH [Zinc oxide].
Mutagenic effects: Not available.
Teratogenic effects: Not available.
- Target organs** : Contains material which causes damage to the following organs: lungs, upper respiratory tract, skin.

12 . Ecological information

Ecotoxicity data

Product/ingredient name	Species	Period	Result
Zinc oxide	Daphnia magna (EC50)	48 hour(s)	>1000 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	1.1 mg/l
	Lepomis macrochirus (LC50)	96 hour(s)	>320 mg/l
	Pimephales promelas (LC50)	96 hour(s)	2246 mg/l
Zinc	Daphnia magna (EC50)	48 hour(s)	2.8 mg/l
	Pimephales promelas (LC50)	96 hour(s)	0.238 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.24 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.41 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	0.56 mg/l
Daphnia magna (LC50)	96 hour(s)	0.57 mg/l	

- Environmental precautions** : Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
- Products of degradation** : Some metallic oxides.

13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material, runoff and contact with soil, waterways, drains and sewers. 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 and local authority requirements.

14 . Transport information

- Regulatory information** : Marked for European Transportation
- UN/ IMDG/IATA DOT/TDG** : Not regulated by TDG and.or DOT in Canada or USA

15 . Regulatory information

United States

HCS Classification : Target organ effects

U.S. Federal regulations : TSCA 6 proposed risk management: Lead
TSCA 8(b) inventory: All components listed.
TSCA 12(b) annual export notification: Lead
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Zinc oxide; Zinc
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Zinc oxide:
Immediate (acute) health hazard, Delayed (chronic) health hazard; Zinc: Fire hazard,
Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: Zinc oxide; Zinc; Lead; Cadmium; Mercury
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Zinc oxide	1314-13-2	60 - 100
	Zinc	7440-66-6	0.5 - 1
Supplier notification	Zinc oxide	1314-13-2	60 - 100
	Zinc	7440-66-6	0.5 - 1

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : Pennsylvania RTK: Zinc oxide: (environmental hazard, generic environmental hazard); Zinc: (environmental hazard, generic environmental hazard); Lead: (environmental hazard, generic environmental hazard); Cadmium: (special hazard, environmental hazard, generic environmental hazard); Mercury: (environmental hazard, generic environmental hazard)
Massachusetts RTK: Zinc oxide; Zinc; Lead; Cadmium; Mercury
New Jersey: Zinc oxide; Zinc; Lead; Cadmium; Mercury
WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Lead	Yes.	Yes.	15 µg/day (ingestion)	Yes.
Cadmium	Yes.	Yes.	0.05 µg/day (inhalation)	Yes.
Mercury	No.	Yes.	No.	No.

Canada

WHMIS (Canada) : Not regulated.
DSL : All components listed.

This product has been classified in accordance with the hazard criteria of the Canadian CPR and the United States OSHA. This MSDS contains all the information required by the CPR and OSHA, the American National Standard Institute (ANSI) Z400.1.

International lists : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements (U.S.A.) : CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, RESPIRATORY TRACT, SKIN.

Hazardous Material Information System (U.S.A.) :

HMIS RATING

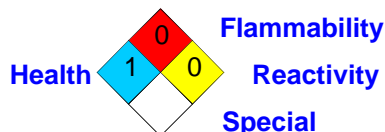
Health	*	1
Fire hazard		0
Physical Hazard		0
Personal protection		A

HAZARD RATINGS

4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal

See section 8 for more detailed information on personal protection.

National Fire Protection Association (U.S.A.) :



References

: ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue : 11/30/2006

Version : 1

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.