

According to SANS 11014:2010 & 10234:2008
Revision Date: 2016/06/08

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Version: 1.1

SECTION 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

Product identifier:

Identification as on the label/Trade name: **TIGER® ZINC**

Additional information: Product code TIGZNGR/01

Relevant identification uses of the substance and uses advised against:

Identified uses: Fertilizer.

Uses advised against: Use only as directed.

Details of the supplier of the Safety Data Sheet:

NULANDIS, A Division of AECI Limited
14 Field Road, LILANTON

Emergency telephone numbers:

Griffon Poison information centre: 082 446 8946
Poisons Information Helpline: 0861 555 777
Nulandis: (011) 823 8000 (o/h) Spill Tech: 086 100 0366 (a/h)

SECTION 2. HAZARD IDENTIFICATION

Classification of the substances or mixture

The mixture is classified according to

SANS 10234:2008, Regulation EC 1272/2008 [EU-GHS/CLP]	
Hazard classes/Hazard categories	Hazard statement
Skin irritation (Category 2)	H315
Hazardous to the aquatic environment (Acute 2)	H401
Hazardous to the aquatic environment (Chronic 2)	H411

For full text of H statements see section 16

The most important adverse effects

The most important adverse physiochemical effects: None.

The most important adverse human health effects: Causes skin irritation.

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Label elements



Hazard pictograms:

Signal Word: Warning

Hazard Statements: H315 Causes skin irritation. H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements: P264 Wash thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/. P302+P352 IF ON SKIN: Wash with plenty of water. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Special labelling of certain mixtures: None

Other hazards: None.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

Ingredients: Classification is based on the following ingredients which may be present.

Substance name (IUPAC/EC)	CAS –No.	Concentration % by weight	Classification
	EC-No.		EC1272/2008
Sulphur	7704-34-9	60-70%	Skin irritation (Category 2) H315.
	231-722-6		
Zinc oxide	1314-13-2	20-30%	Aquatic acute 1 H400. Aquatic chronic 1 H410.
	215-22-5		

For full text of H statements see section 16

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4. FIRST AID MEASURES

Description of first aid measures:

In case of inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention.

In case of eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Check for and remove any contact lenses. Get medical attention.

In case of ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention.

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Most important symptoms and effects, both acute and delayed:

Inhalation: Sulphur dust may irritate the mucous membranes of the respiratory passage.

Ingestions: Minimal toxicity, irritating to mouth, throat and stomach. May cause digestive tract disorder/damage.

Skin contact: Causes skin irritation.

Eye contact: Sulphur dust is capable of irritating the inner surfaces of the eyelids.

Indication of any immediate medical attention and special treatment needed:

None known.

SECTION 5. FIRE -FIGHTING MEASURE

Extinguisher media:

Suitable extinguisher media:

SMALL FIRE: May be smothered with sand or soil sulphur. Fine water spray or fog is recommended, CO₂ or dry chemical.

LARGE FIRE: Fine water spray or fog is recommended, CO₂ or dry chemical.

Unsuitable extinguishing media: Hoses and extinguishers with pressure streams should be avoided where this sulphur product is dusty or where it may create a further hazard by raising more dust clouds.

Special hazards arising from the mixture:

Combustion may produce sulphur dioxide.

Unusual fire and explosion hazards: Dust suspended in air is readily ignited by flames, static electricity or friction spark. Every reasonable step must be taken to minimize dust formation. Dust tight castings should be equipped with explosion relief vents. Spark less electrical equipment is recommended. Handling equipment must be grounded or bonded to avoid static electricity. Keep away from source of flame or sparks.

Advice for fire-fighters:

Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) for use in acid-gas atmosphere and full turnout gear. Be sure to use an approved/certified respirator or equivalent equipment until decontaminated. Water runoff can cause environmental damage. Fumes from unprotected sulphur fires shall be avoided, if possible, by approaching from the upwind side. Contain run-off water.

SECTION 6. ACCIDENTAL RELEASE

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Splash goggles, gloves. An approved respirator for use in acid-gas atmosphere.

For emergency responders: Splash goggles, gloves. An approved respirator for use in acid-gas atmosphere.

Environmental precautions:

Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapours, if any. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

Methods for containment and cleaning up:

For small spills Contain spilled material if possible. Collect in suitable and properly labelled containers.

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For large spills Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in well labelled container for disposal according to local regulations.

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 information on disposal.

Additional information:

None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Protective measures: Observe directions on label and instructions for use.

Advice on general occupational hygiene: Do not eat drink or smoke when handling this product.

Conditions for safe storage, including incompatibilities:

Store product in a segregated and approved area. Solid becomes corrosive to metals when stored wet. Sulphur/bentonite fertilizer will physically break down when exposed to water or moisture. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use.

Specific end uses:

Use as directed. Use original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Occupational exposure limits (OEL):

Zinc oxide, fume- TWA OEL-RL 5 mg/m³, OEL- STEL 10 mg/m³

Biological exposure indices (BEI):

None.

Exposure control:

Appropriate engineering controls: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects). In addition avoid high dust concentration by providing ventilation when necessary.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

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Eye/face protection: Use safety glasses. If there is a potential for exposure to dust which could cause eye discomfort, wear chemical goggles that are dust tight.

Hand protection: Use chemical resistant gloves. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride.

Body protection: Workers whose skin may be sensitive to sulphur dust should button collars, roll sleeves down, and gather trousers at the ankle. Fire-retardant fabrics are recommended.

Respiratory protection: Dust-type respirators shall be provided for dusty conditions. Respiratory protection such as an approved respirator must be used when there is a potential to exceed the exposure limit requirements or guidelines.

Environmental exposure controls: Prevent product from entry into sewers and water courses.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (form): Solid prill (pellet or pastille shaped).

Colour: Light brown.

Odour: Not applicable.

Odour threshold: Not applicable.

pH (at concentration): No information available.

Melting point/range (°C): 119 °C

Boiling point/range (°C): 444 °C

Flash point (°C): 188 °C

Evaporation rate: No information available.

Flammability (solid, gas): No information available.

Ignition temperature (°C): No information available.

Upper/lower flammability/explosive limits:

Lower explosive limit: 35 g/m³

Upper explosive limit: 1400 g/m³ (dust)

Vapour pressure (20°C): solid, < 0.0001 mm Hg.

Vapour density: >1

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Specific gravity: Solid, 2.07 g/ml.

Water solubility: No information available.

n-Octanol/Water partition coefficient: No information available.

Auto-ignition temperature: 190 °C

Decomposition temperature: No information available.

Viscosity, dynamic (cPa s): No information available.

Physical hazards:

Explosive properties: Risk of dust explosion.

Other information:

Fat solubility (solvent-oil to be specified): No information available.

Bulk density: No information available.

Dissociation constant in water (p Ka): No information available.

Oxidation-reduction potential: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity:

The product is stable under normal conditions. Avoid elevated temperatures and dust formation.

Chemical stability:

Stable under normal storage conditions for 2 years.

Possibility of hazardous reactions:

Hazardous polymerization will not occur.

Conditions to avoid:

Fire and dust explosions.

Incompatible materials:

Zinc clad, copper bearing alloys and aluminium. Water reactive materials.

Hazardous decomposition products:

Sulphur dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution:

Non-human toxicological data: No Information available.

Method: No Information available.

Dosage: No Information available.

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Routes of administration: No Information available.

Results: No Information available.

Absorption: No Information available.

Distribution: No Information available.

Metabolism: No Information available.

Excretion: No Information available.

Information on toxicological effects:

Acute toxicity:

Sulphur

Acute oral LD₅₀ for rats > 5000 mg/kg

Inhalation LD₅₀ (4 h) for rats > 5430 mg/m³

Dermal LD₅₀ for rats > 2000 mg/kg

Zinc oxide

Acute oral LD₅₀ for rats > 7 950 mg/kg.

Inhalation LD₅₀ (4 h) for mouse >2500 mg/m³.

Chronic toxicity: No information available.

Skin corrosion/irritation:

Sulphur

No skin irritation for rabbits.

Zinc oxide

Mild skin irritation for rabbits

Serious eye damage/irritation:

Sulphur

No eye irritation for rabbits.

Zinc oxide

Mild eye irritation for rabbits.

Respiratory or skin sensitization: No information available.

Germ cell mutagenicity: No information available.

Carcinogenicity: 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:

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Zinc oxide

Developmental Toxicity - rat - Oral

Specific Developmental Abnormalities: Homeostasis Effects on Newborn: Stillbirth. Effects on Newborn: Growth statistics (e.g., reduced weight gain).

STOT-single exposure: No information available.

STOT-repeated exposure: No information available.

Aspiration hazard: No information available.

Signs and symptoms of exposure:

Zinc oxide

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.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity:

Sulphur

Birds:

Acute oral LC₅₀ (8 d) for Bobwhite quail >5000 ppm.

Fish: Non-toxic to fish.

Toxicity to daphnia and other aquatic invertebrates: LC₅₀ (48 h, static) *Daphnia magna* (Water flea) > 665 mg/ ℓ.

Aquatic plants: EC₅₀ (72 h) *Ankistrodesmus bibaianus* >232 mg/ ℓ.

Bees: Non-toxic to bees.

Other beneficial spp.: Non-toxic to *Coccinella septempunctata*, *Amblyseius potentillae*, *Amblyseius finlandicus*, *Anthocoris nemorum* and *Chrysoperla carnea*.

Toxic to *Typhlodromus pyri*, *Trichogramma cacoeciae* and *Coccygomimus turionellae*.

Zinc oxide

Fish:

LC₅₀ (96 h) *Oncorhynchus mykiss* (Rainbow trout) 1.1 mg/ ℓ.

Toxicity to daphnia and other aquatic invertebrates: EC₅₀ (48 h) *Daphnia magna* (Water flea) 0.098 mg/ ℓ.

Persistence and degradability:

No information available.

Bioaccumulative potential:

No information available.

Mobility in soil:

No information available.

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Results of PBT& vPvB assessment:

No information available.

Other adverse effects:

Zinc oxide

Very toxic to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Treat as hazardous waste and dispose of in accordance with municipal, provincial and national regulations.

Product/ packaging disposal:

Treat as hazardous waste and dispose of in accordance with municipal, provincial and national regulations.

SECTION 14. TRANSPORT INFORMATION

Information:

As per SANS 10228:2012 Annex B, Special provision number 242: Sulphur is considered non-dangerous for transport when it has been formed into a specific shape for example prills, granules, pellets, pastille or flakes.

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	3077	3077	3077
UN Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc oxide)
Transport hazard class:	9	9	9
Packaging group:	III	III	III
Marine pollutant:	Yes	Yes	Yes
Special precautions for user:	No	No	No
Transport in bulk according to MARPOL 73/78 Annex II and the IBC code	No	No	No

Inland waterways: Not required.

Emergency response information: No information.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:

Relevant information regarding authorization: Occupational Health and Safety Act 1993 Regulation for Hazardous Chemical Substances.

ACGIH: American Conference of Governmental Industrial Hygienists (ACGIH)

Relevant information regarding restrictions:

EU regulations: Regulation EC 1272/2008 [EU-GHS/CLP]

Other National regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996).

SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes.

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National Environmental Management: Waste Act 59 of 2008.

Chemical Safety Assessment carried out? No

SECTION 16. OTHER INFORMATION

Indication of changes:

GHS aligned

Relevant classification and H statements (number and full text):

Aquatic Acute 1: Hazardous to the aquatic Environment (Aquatic Acute 1)

Aquatic Chronic 1: Hazardous to the aquatic Environment (Aquatic Chronic 1)

Aquatic Acute 2: Hazardous to the aquatic Environment (Aquatic Acute 2)

Aquatic Chronic 2: Hazardous to the aquatic Environment (Aquatic Chronic 2)

H315 Causes skin irritation. H400 Very toxic to aquatic life. H401 Toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects.

Training instructions:

Use as indicated on the label, special training may be required for application.

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Notice to readers:

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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.