

1. Identification

Product identifier MINTREX® Zn Chelated Trace Mineral
Other means of identification None.
Recommended use Animal Feed Supplement
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

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2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Acute toxicity, oral Category 4
 Sensitization, skin Category 1
OSHA defined hazards Combustible dust
Label elements



Signal word Warning
Hazard statement May form combustible dust concentrations in air. Harmful if swallowed. May cause an allergic skin reaction.
Precautionary statement
Prevention Prevent dust accumulation to minimize explosion hazard. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Observe good industrial hygiene practices.
Response If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage Store away from incompatible materials.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Substances

Chemical name	CAS number	%
Zinc methionine hydroxy analogue chelate	292140-29-5	95-100

Impurities

Chemical name	Common name and synonyms	CAS number	%
Nickel		7440-02-0	≤ 0.1

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
Most important symptoms/effects, acute and delayed	Dusts may irritate the respiratory tract, skin and eyes. Harmful if swallowed. May cause an allergic skin reaction. Dermatitis. Rash.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	May form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Combustible dust clouds may be created where operations produce fine material (dust). Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Explosion-proof general and local exhaust ventilation. Do not taste or swallow. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Impurities	Type	Value
Nickel (CAS 7440-02-0)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values (TLV)

Impurities	Type	Value	Form
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m3	Inhalable fraction.

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Impurities	Type	Value
Nickel (CAS 7440-02-0)	IDLH	10 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Impurities	Type	Value
Nickel (CAS 7440-02-0)	TWA	0.015 mg/m3

Biological limit values

ACGIH Biological Exposure Indices (BEI)

Impurities	Value	Determinant	Specimen	Sampling Time
Nickel (CAS 7440-02-0)	5 µg/l	Nickel	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Provide sufficient ventilation for operations causing dust formation. Follow standard monitoring procedures.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Use only appropriately classified electrical equipment and powered industrial trucks.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Full contact: Glove material: Nitrile. Use gloves with breakthrough time of >480 minutes. Minimum glove thickness 0.28 mm.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Wear respirator with dust filter.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Powder. Granules.

Color Grey to tan.

Odor Characteristic. Sulfurous.

Odor threshold No data available.

pH 6 saturated aqueous solution

Melting point/freezing point Property has not been measured.

Initial boiling point and boiling range Property has not been measured.

Flash point Property has not been measured.

Evaporation rate Not applicable, material is a solid.

Flammability (solid, gas) Fine particles may form explosive mixtures with air.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Property has not been measured.

Explosive limit - upper (%) Property has not been measured.

Vapor pressure Not applicable, material is a solid.

Vapor density Not applicable, material is a solid.

Relative density Property has not been measured.

Solubility(ies)

Solubility (water) 1.8 % w/w @ 25°C

Partition coefficient (n-octanol/water) Not applicable, product is a mixture.

Auto-ignition temperature Property has not been measured.

Decomposition temperature	Property has not been measured.
Viscosity	Not applicable, material is a solid.
Other information	
Bulk density	1.04 g/cm ³ (packed) 0.93 g/cm ³ (loose)
Dust explosion properties	
Kst	45 bar.m/s
St class	1 Weak explosion.
Minimum ignition energy (MIE) - dust cloud	> 11000 mJ
Explosive properties	Not explosive.
Kinematic viscosity	Not applicable, material is a solid.
Oxidizing properties	Not oxidizing.
Particle size	600 micron

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Dust may irritate respiratory system. Prolonged inhalation may be harmful.
Skin contact	Dust or powder may irritate the skin. May cause an allergic skin reaction.
Eye contact	Dust may irritate the eyes.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Harmful if swallowed.

Product	Species	Test Results
MINTREX® Zn Chelated Trace Mineral (CAS Mixture)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Inhalation		
<i>Aerosolized dust</i>		
LC50	Rat	> 1.04 mg/l, 4 hours
Oral		
LD50	Rat	> 300 - 2000 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Dust may irritate the eyes.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	

Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	This product is not expected to cause mutagenic or genotoxic effects.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Nickel (CAS 7440-02-0)	2B Possibly carcinogenic to humans.
NTP Report on Carcinogens	
Nickel (CAS 7440-02-0)	Reasonably Anticipated to be a Human Carcinogen.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)	
Not listed.	

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.
Further information	None known.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this substance.
Bioaccumulative potential	No data available.
Mobility in soil	This product has very low solubility in water and low mobility in the environment.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	
Not regulated.	
CERCLA Hazardous Substance List (40 CFR 302.4)	
Nickel (CAS 7440-02-0)	Listed.
SARA 304 Emergency release notification	
Not regulated.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

This substance is not on the TSCA 8(b) inventory or is designated "inactive".

Superfund Amendments and Reauthorization Act of 1986 (SARA)**SARA 302 Extremely hazardous substance**

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Combustible dust
Acute toxicity (any route of exposure)
Respiratory or skin sensitization

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc compounds	Category N982	< 3
Nickel	7440-02-0	≤ 0.1

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Nickel (CAS 7440-02-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations****US. Massachusetts RTK - Substance List**

Nickel (CAS 7440-02-0)

US. New Jersey Worker and Community Right-to-Know Act

Nickel (CAS 7440-02-0)

US. Pennsylvania Worker and Community Right-to-Know Law

Nickel (CAS 7440-02-0)

US. Rhode Island RTK

Nickel (CAS 7440-02-0)

California Proposition 65

WARNING: This product can expose you to Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Nickel (CAS 7440-02-0)

Listed: October 1, 1989

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 29-October-2015

Revision date 28-March-2024

Version # 06

Further information Refer to:
OSHA 3371-08 2009, Hazard Communication Guidance for Combustible Dusts
NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids

NFPA ratings



List of abbreviations

LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.

References

IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer

Novus International, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

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