

PARSOL® ZX**5016338**

Version 2.0

Revision Date 04/13/2023

Date of last issue: 07/29/2019

SECTION 1. IDENTIFICATION

Product name : PARSOL® ZX
Substance name : Zinc oxide – Triethoxycaprylsilane

Manufacturer or supplier's details

Company name of supplier : DSM Nutritional Products
Address : 45 Waterview Blvd
Parsippany NJ 07054-1298
Telephone : (908) 475-7373
Telefax : (908) 475-7406
Emergency telephone number : 1-800-424-9300 (24 HR CHEMTREC, CA & US); Outside CA & US +1-703-572-3887 (COLLECT CALLS ACCEPTED)
E-mail address of person responsible for the SDS : sds.nutritionalproducts@dsm.com

Recommended use of the chemical and restrictions on use

Recommended use : UV filter
Ingredient for personal care products

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

The product contains ultrafine particles. For more specific information on particle size distribution refer to section 9.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Brief description of the product : Mixture (preparation) containing active ingredient and auxiliary substance

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
zinc oxide	1314-13-2	$\geq 90 - \leq 100$
triethoxyoctylsilane	2943-75-1	$\geq 1 - < 5$

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.
If inhaled : Move to fresh air.
Consult a physician after significant exposure.

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- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No specific symptoms known.
- Notes to physician : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water
Foam
- Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Consider dust explosion hazard.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Avoid dust formation.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust.
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against : Avoid dust formation.

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- fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.
Take precautionary measures against static discharges.
- Advice on safe handling : Avoid contact with skin and eyes.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : To maintain product quality, do not store in heat or direct sunlight.

Keep container tightly closed and dry.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
zinc oxide	1314-13-2	TWA (Dust)	5 mg/m ³	NIOSH REL
		C (Dust)	15 mg/m ³	NIOSH REL

Personal protective equipment

- Respiratory protection : In case of high dust concentration use a dust mask applicable to local conditions.
- Hand protection
Remarks : Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves.
Glove material: for example nitrile rubber
- Eye protection : Safety glasses with side-shields
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

- Appearance : fine powder
- Colour : white
- Odour : odourless
- Odour Threshold : No information available.
- pH : 5 - 9 (10%)
(aqueous suspension)
- Melting point/range : > 1,975 °C
- Boiling point/boiling range : Not applicable

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Flash point	: Not applicable
Flammability (solid, gas)	: Not expected to form explosive dust-air mixtures.
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: 5.6
Density	: not determined
Water solubility	: < 50 mg/l
Solubility in other solvents	: Oils and fats: dispersible
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: No data available
Thermal decomposition	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: No data available
Particle characteristics	
Particle Size Distribution	: D50 = 115 nm D1 = 53 nm Type of distribution: number distribution Measurement technique: laser diffraction Physical state: single particles
Specific surface area	: 12.2 m2/g Measurement technique: Brunauer, Emmett and Teller (BET) method using Nitrogen

Other information

Bulk density	: 0.9 - 1.1 g/cm3
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SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No hazards to be specially mentioned.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Dust may form explosive mixture in air.
Conditions to avoid	: Heat
Incompatible materials	: Strong acids and strong bases Strong oxidizing agents
Hazardous decomposition products	: Zinc oxide fumes.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: Acute toxicity estimate : > 5,000 mg/kg (Calculation method)
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Acute inhalation toxicity	: LC50 (Rat, 4 h): > 5.7 mg/l publicly available data Information refers to the main component. (OECD Test Guide- line 403)
Acute dermal toxicity	: Acute toxicity estimate : > 2,000 mg/kg (Calculation method)
Skin irritation zinc oxide	: No skin irritation (Rabbit, OECD Test Guideline 404) publicly available data
triethoxyoctylsilane	: Skin irritation (Rabbit, OECD Test Guideline 404)
Eye irritation	: No eye irritation (Rabbit, OECD Test Guideline 405, Active ingredient) publicly available data : Dust contact with the eyes can lead to mechanical irritation.
Sensitisation	: May cause sensitisation of susceptible persons by skin contact. (Guinea pig, Maximisation Test, OECD Test Guideline 406, Active ingredient) publicly available data
Genotoxicity in vitro	: not mutagenic, not genotoxic (Various test systems, Active ingredient) publicly available data
Genotoxicity in vivo	: not genotoxic (Micronucleus test, Mouse, OECD Test Guideline 474, Active ingredient) publicly available data
Carcinogenicity	: No indication for carcinogenicity known.
IARC	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.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcino- gen by NTP.
Reproductive toxicity	: No toxicity to reproduction Test performed using a similar product. publicly available data (several species, Oral, Active ingredient)
Teratogenicity	: not teratogenic

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	publicly available data (several species, Active ingredient)
STOT - single exposure (Acute exposure)	: The substance or mixture is not classified as specific target organ toxicant, single exposure.
STOT - repeated exposure	: Lowest observed adverse effect level (Dermal, Rat) : 75 mg/kg bw/d Test substance: Active ingredient Subacute toxicity study (28 days) publicly available data (OECD Test Guideline 410) : NOAEC (Inhalation, Rat) : $\geq 0.5 \text{ mg/m}^3$ Test substance: Active ingredient Subacute toxicity study (28 days) publicly available data
Aspiration toxicity	: No aspiration toxicity classification

SECTION 12. ECOLOGICAL INFORMATION**Toxicity**

Toxicity to fish	: Oncorhynchus mykiss (rainbow trout) LC50 (96 h) $\geq 0.2 \text{ mg/l}$ Test substance: Active ingredient publicly available data
Toxicity to daphnia and other aquatic invertebrates	: Ceriodaphnia dubia (water flea) EC50 (48 h) $\geq 0.2 \text{ mg/l}$ Test substance: Active ingredient publicly available data
Toxicity to algae	: Pseudokirchneriella subcapitata (green algae) IC50 (72 h) 0.2 mg/l Test substance: Active ingredient publicly available data (OECD Test Guideline 201)
Toxicity to fish (Chronic toxicity)	: Danio rerio (zebra fish) NOEC (35 d) $\geq 0.5 \text{ mg/l}$ Test substance: Active ingredient publicly available data (OECD Test Guideline 210)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: Daphnia magna (Water flea) NOEC (21 d) 0.058 mg/l Test substance: Active ingredient publicly available data (OECD Test Guideline 211)

Persistence and degradability

Biodegradability	: The methods for determining the biological degradability are
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not applicable to inorganic substances.
Information refers to the main component.

Bioaccumulative potential

Bioaccumulation : Not relevant
Information refers to the main component.

Partition coefficient: n-
octanol/water : Not applicable

Mobility in soil

Distribution among environ-
mental compartments : No data available

Other adverse effects

Regulation 40 CFR Protection of Environment; Part 82 Protection of
Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks This product neither contains, nor was manufactured with a
Class I or Class II ODS as defined by the U.S. Clean Air Act
Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological informa- : Very toxic to aquatic organisms, may cause long-term adverse
tion effects in the aquatic environment.

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Discharge into the environment must be avoided.
Do not contaminate ponds, waterways or ditches with chemi-
cal or used container.
Do not dispose of waste into sewer.
Offer surplus and non-recyclable solutions to a licensed dis-
posal company.

User must determine if any wastes generated exhibit hazard-
ous characteristics as per 40 CFR Part 261 or other national /
local legislation.

Contaminated packaging : Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S.
(zinc oxide)
Class : 9
Packing group : III
Labels : 9

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IATA-DGR

UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.
(zinc oxide)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 956
Packing instruction (passenger aircraft) : 956
Environmentally hazardous : yes

IMDG-Code

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S.
(zinc oxide)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**49 CFR**

UN/ID/NA number : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.
(zinc oxide)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : yes(zinc oxide)
General advice : 49CFR: not regulated as a dangerous good in non-bulk packaging

Remarks : Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

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SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

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

SARA 311/312 Hazards : No SARA Hazards**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

zinc oxide 1314-13-2 >= 90 - <= 100 %

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Knowzinc oxide 1314-13-2
triethoxyoctylsilane 2943-75-1**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California List of Hazardous Substances

zinc oxide 1314-13-2

TSCA list

No substances are subject to a Significant New Use Rule.

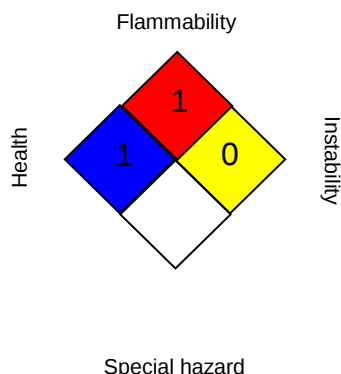
No substances are subject to TSCA 12(b) export notification requirements.

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SECTION 16. OTHER INFORMATION**Further information****NFPA 704:****HMIS® IV:**

HEALTH	/	1
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

ACGIH = American Conference of Governmental Industrial Hygienists. CFR = Code of Federal Regulations. EPA = Environmental Protection Agency. NIOSH = National Institute of Occupation-

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al Safety and Health. OSHA = Occupational Safety and Health Administration. STEL = Short term exposure limit. TLV = Threshold Limit Value. TLV-C = Ceiling Limit Value. TWA = Time Weighted Average.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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