

Conforms: GHS (rev 4) (2011)
(This Safety Data Sheet conforms to the requirements of the Hazard Communication Standard (HCS)
(29 CFR 1910.1200(g)), revised in 2012.) - United States

Date of issue/ Date of revision : 08/22/2019
Date of previous issue : 08/22/2018
Version : 2.0



SAFETY DATA SHEET

NUTRA-SPRAY MANZINC

Section 1. Identification

Product identifier : NUTRA-SPRAY MANZINC
Product type : solid
Product code : PYP99W

Uses

Area of application : Professional applications
Material uses : Fertilizers.

Supplier

Supplier's details : Yara North America, Inc.

Address

Street : 100 North Tampa Street, Suite 3200
Postal code : 33602
City : TAMPA
Country : United States

Telephone number : +1 813 222 5700
Fax no. : +1 813 875 5735
e-mail address of person : yna-hesq@yara.com
responsible for this SDS

Emergency telephone number : US: Chemtrec 24-hours Emergency Response: 1-800-424-9300
(with hours of operation) : Canada: 24 Hour Emergency Service, Canutec 613-996-6666

National advisory body/Poison Center

Name : The National Poisons Emergency number
Telephone number : 1 800 222 1222

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture. : AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: H410 Very toxic to aquatic life with long lasting effects.

Precautionary statementsPrevention
Response: P273 Avoid release to the environment.
: P391 Collect spillage.

Disposal

: P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise
classified

: None.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Ingredient name	CAS number	%
Zinc oxide (ZnO)	1314-13-2	>= 30- <35

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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 necessary first aid measures**

- Eye contact** : Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- Inhalation** : If inhaled, remove to fresh air.
- Skin contact** : Wash with soap and water. Get medical attention if irritation develops.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms/effects, acute and delayed**Potential acute health effects**

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures**Extinguishing media**

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None identified.
- Specific hazards arising from the chemical** : This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
metal oxide/oxides
Avoid breathing dusts, vapors or fumes from burning materials.
In case of inhalation of decomposition products in a fire, symptoms may be delayed.
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- 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.

- Remark : Non-flammable.
 Remark : Non-explosive.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Not for human or animal consumption.

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.

Advice on general occupational hygiene

- : Empty containers retain product residue and can be hazardous. Do not reuse container.
- : 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. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Zinc oxide (ZnO)	<p>OSHA PEL 1989 (1989-03-01) TWA 5 mg/m3 Form: Fume STEL 10 mg/m3 Form: Fume TWA 10 mg/m3 Form: Total dust TWA 5 mg/m3 Form: Respirable fraction</p> <p>OSHA PEL (1993-06-30) TWA 5 mg/m3 Form: Fume TWA 15 mg/m3 Form: Total dust TWA 5 mg/m3 Form: Respirable fraction</p> <p>NIOSH REL (1994-06-01) TWA 5 mg/m3 Form: Dust and fumes STEL 10 mg/m3 Form: Fume CEIL 15 mg/m3 Form: Dust</p> <p>ACGIH TLV (2003-01-01) TWA 2 mg/m3 Form: Respirable fraction STEL 10 mg/m3 Form: Respirable fraction</p> <p>OSHA PEL (1993-06-30) TWA 5 mg/m3 Form: Fume</p>

Appropriate engineering controls
Environmental exposure controls

- : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process

equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : A washing facility or water for eye and skin cleaning purposes should be present. 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. Wash contaminated clothing before reusing.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Personal protective equipment (Pictograms) :



Section 9. Physical and chemical properties

Appearance

- Physical state** : solid
- Color** : Light,
- Odor** : Odorless.
- Odor threshold** : Not relevant/applicable due to nature of the product.
- pH** : 8 [Conc.: 5 g/l] @ 20 °C (68 °F)
- Melting/freezing point** : Decomposes: > 150 °C (> 302 °F)
- Boiling/condensation point** : Not relevant/applicable due to nature of the product.
- Sublimation temperature** : Not determined.
- Flash point** : Not determined.
- Fire point** : Not determined.

Evaporation rate	: Not determined.
Flammability (solid, gas)	: Non-flammable.
Lower and upper explosive (flammable) limits	: Lower: Not determined. Upper: Not determined.
Vapor pressure	: Not determined.
Bulk density	: 1,250 kg/m ³
Density	: Not applicable.
Relative density	: Not applicable.
Solubility	: insoluble in water.
Solubility in water	: Not relevant/applicable due to nature of the product.
Partition coefficient: n-octanol/water	: Not determined.
Auto-ignition temperature	: Not determined.
Decomposition temperature	: > 150 °C (> 302 °F)
Viscosity	: Dynamic: Not relevant/applicable due to nature of the product. Kinematic: Not relevant/applicable due to nature of the product.
Explosive properties	: Non-explosive.
Oxidizing properties	: None

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid contamination by any source including metals, dust and organic materials.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects**Acute toxicity**

Product/ingredient name	Method	Species	Result	Exposure	References
Zinc oxide (ZnO)	LD50 Oral	Rat	> 5,000 mg/kg	Not applicable.	IUCLID 5
	LC50 Inhalation Dusts and mists	Rat	> 5.7 mg/l	4 h	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion**Conclusion/Summary**

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Sensitization**Conclusion/Summary**

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Specific target organ toxicity (repeated exposure)

No known significant effects or critical hazards.

Aspiration hazard

No known significant effects or critical hazards.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Effects on or via lactation : No known significant effects or critical hazards.
Other effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Numerical measures of toxicity**Acute toxicity estimates**

Not available.

Section 12. Ecological information**Toxicity**

Product/ingredient name	Method	Species	Result	Exposure	References
Zinc oxide (ZnO)					
	Acute NOEC Fresh water	Fish.	0.026 - 0.075 mg/l	720 h	IUCLID 5
	Acute LC50 Fresh water	Crustaceans	0.14 mg/l	24 h	IUCLID 5
	Acute EC50 Fresh water	Water flea	1 - 10 mg/l	48 h	IUCLID 5
	OECD 201 Acute IC50 Fresh water	Algae	0.136 mg/l	72 h	IUCLID

Conclusion/Summary : Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Conclusion/Summary : No known significant effects or critical hazards.

Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.


Other adverse effects : No known significant effects or critical hazards.


Section 13. Disposal considerations**Product**

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. 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 local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with

jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

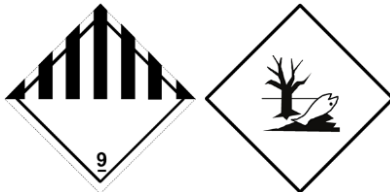
Regulation: UN Class	
14.1 UN number	3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Environmental hazards</u> : Yes.	

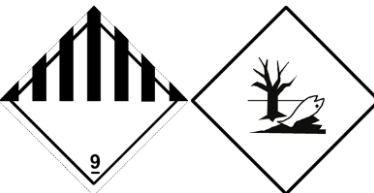
Regulation: IMDG	
14.1 UN number	3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Marine pollutant</u> : Yes. <u>Emergency schedules (EmS)</u> : F-A, S-F	


Regulation: IATA

Date of issue : 08/22/2019

Page:11/16

14.1 UN number	3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Marine pollutant</u> : Yes.	

Regulation: DOT Classification	
14.1 UN number	3077
14.2 UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. ()
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Marine pollutant</u> : Not available.	

Regulation: TDG Class	
14.1 UN number	3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. ()
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark)	

Environmental hazards : Yes.

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

IMSBC

Bulk cargo shipping name : NUTRA-SPRAY MANZINC
Class : Not applicable.
Group : C
Marpol V : Non-HME

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not applicable.

Section 15. Regulatory information

United States

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States - EPA Clean water act (CWA) section 307 - Priority pollutants: Zinc oxide (ZnO);

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed
Clean Air Act Section 602 Class I Substances : Not listed
Clean Air Act Section 602 Class II Substances : Not listed
DEA List I Chemicals (Precursor Chemicals) : Not listed
DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

No products were found.

SARA 313**Form R - Reporting requirements**

Product name	CAS number	%
Zinc oxide (ZnO)	1314-13-2	>= 30 - < 35
Carbonic acid, manganese(2+) salt (1:1)	598-62-9	>= 50 - < 65

Supplier notification

Product name	CAS number	%
Carbonic acid, manganese(2+) salt (1:1)	598-62-9	>= 50 - < 65
Zinc oxide (ZnO)	1314-13-2	>= 30 - < 35

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

State regulations

- Massachusetts** : The following components are listed:
Zinc oxide (ZnO)
- New York** : None of the components are listed.
- New Jersey** : The following components are listed:
Zinc oxide (ZnO)
- Pennsylvania** : The following components are listed:
Carbonic acid, manganese(2+) salt (1:1)
Zinc oxide (ZnO)

California Prop. 65

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Inventory list

Philippines inventory (PICCS): All components are listed or exempted.

Korea inventory: All components are listed or exempted.

Japan inventory: All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

Australia inventory (AICS): All components are listed or exempted.

Canada inventory: All components are listed or exempted.

United States inventory (TSCA 8b): All components are listed or exempted.

EC INVENTORY (EINECS/ELINCS): All components are listed or exempted.

Canada: All components are listed or exempted.

Section 16. Other information

Date of issue : 08/22/2019

Page:14/16

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

Health	/	0
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

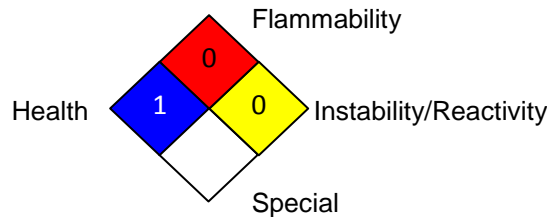
The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Chronic toxicity:

- : No data available.

* : Carcinogen, Target organs, Reproductive effects, Sensitizer to lungs

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



Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

History

Date of printing : 09/02/2019
 Date of issue/Date of revision : 08/22/2019

Date of previous issue	: 08/22/2018
Revision comments	: The following sections contain new and updated information: 9.
Version	: 2.0
Prepared by	: Yara Chemical Compliance (YCC).
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
Key data sources	: EU REACH IUCLID5 CSR. National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances. Sphera Solutions Inc., 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.

|| Indicates information that has changed from previously issued version.

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.