



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **ION-14**

Other means of identification : Not available.

Recommended use of the chemical and restrictions on use

: Agricultural amendment.
Restriction on use: None known

Chemical family

: Mixture

Name, address, and telephone number
of the supplier:

Faust Bio-Agricultural Services

6080 Wigrich Rd
Independence, OR, USA
97351

Supplier's Telephone # : 1-855-844-4632 (9am-5pm PST Monday to Friday)

24 Hr. Emergency Tel # : 1-855-844-4632 (9am-5pm PST Monday to Friday)

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Brown granular powder. Mild odour.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Hazard pictogram(s)

None required under U.S. OSHA Hazcom 2012 and Canadian WHMIS 2015 regulations.

Signal Word

Not required

Hazard statement(s)

Not required

Precautionary statement(s)

Not required

Other hazards

Other hazards which do not result in classification: May cause mild transient irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Humic acids	Alkali Extracted Humic Acid	1415-93-6	1.0 - 5.0
Hydrated amorphous silica	Monosilicic acid	10279-57-9	1.0 - 5.0



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 2 of 10

SAFETY DATA SHEET

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do not induce vomiting, unless directed to do so by qualified medical personnel. Give small amounts of water to drink. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- Inhalation* : If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration.
- Skin contact* : Wash off with soap and plenty of water. If skin irritation occurs: get medical advice/attention. Take off contaminated clothing and wash it before reuse.
- Eye contact* : Flush eyes with water for at least 15 minutes. If eye irritation persists: get medical advice/attention.

Most important symptoms and effects, both acute and delayed

- : May cause mild transient irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

- Suitable extinguishing media* : Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

- Unsuitable extinguishing media* : Use water spray with caution. Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Carbon oxides and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

- Protective equipment for fire-fighters* : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

- Special fire-fighting procedures* : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Use water to cool fire-exposed containers. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply or any natural waterway. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 3 of 10

SAFETY DATA SHEET

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate area of release. Stop the spill at source if it is safe to do so. Remove all sources of ignition. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Wear protective gloves and eye/face protection. Use only in well-ventilated areas. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment. Avoid breathing fumes or mists. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from incompatibles. Keep containers tightly closed when not in use.

Conditions for safe storage : Store in original containers. Store at temperatures between 4.4°C - 49°C. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Incompatible materials : None known or reported by the manufacturer.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
	Humic acids	N/Av	N/Av	N/Av
Hydrated amorphous silica	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Use only in well-ventilated areas. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. A self contained breathing apparatus should be used in emergency situations or instances where exposure levels are not known. Seek advice from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

: Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

: Wear as appropriate: Chemical safety glasses with side shields or splash proof goggles.

Other protective equipment

: An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 4 of 10

SAFETY DATA SHEET

General hygiene considerations

- : Do not ingest. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Dark brown powder.

Odour : Mild odour.

Odour threshold : Not available.

pH : 7-9

Melting Point/Freezing point : Not available.

Initial boiling point and boiling range

: Not available.

Flash point : Not available.

Flashpoint (Method) : Not available.

Evaporation rate (BuAe = 1) : Not available.

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: Not available.

Upper flammable limit (% by vol.)

: Not available.

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : Not available.

Vapour density : Not available.

Relative density / Specific gravity

: Not available.

Solubility in water : Soluble.

Other solubility(ies) : Not available.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: Not available.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

Viscosity : Not available.

Volatiles (% by weight) : Not available.

Volatile organic Compounds (VOC's)

: Not available.

Absolute pressure of container

: Not applicable.

Flame projection length : Not applicable.

Other physical/chemical comments

: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Material is stable under normal conditions.

Possibility of hazardous reactions

: Hazardous polymerization does not occur.



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 5 of 10

SAFETY DATA SHEET

- Conditions to avoid** : Avoid heat and open flame. Keep away from incompatibles. Keep container tightly closed when not in use.
- Incompatible materials** : See Section 7 (Handling and Storage) for further details.
- Hazardous decomposition products** : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

- Routes of entry inhalation** : YES
- Routes of entry skin & eye** : YES
- Routes of entry Ingestion** : YES
- Routes of exposure skin absorption** : YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Under normal conditions of use, harmful effects are not expected.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

- : May cause mild transient irritation.

Sign and symptoms eyes

- : May cause mild transient irritation.

Potential Chronic Health Effects

- : Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

- : Not expected to have other reproductive effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : Target Organs: Eyes, skin and digestive system.

The substance or mixture is not classified as specific target organ toxicant, single exposure.

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : Not available.

Toxicological data

- : See below for individual ingredient acute toxicity data.



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 6 of 10

SAFETY DATA SHEET

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Humic acids	N/Av	N/Av	N/Av
Hydrated amorphous silica	N/Av	N/Av	N/Av

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Humic acids	1415-93-6	N/Av	N/Av	None.
Hydrated amorphous silica	10279-57-9	N/Av	N/Av	None.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Humic acids	1415-93-6	N/Av	N/Av	None.
Hydrated amorphous silica	10279-57-9	N/Av	N/Av	None.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Humic acids	1415-93-6	N/Av	N/Av	None.
Hydrated amorphous silica	10279-57-9	N/Av	N/Av	None.

Persistence and degradability

: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation potential

: No data is available on the product itself.



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 7 of 10

SAFETY DATA SHEET

Mobility in soil : No data is available on the product itself.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : Under the RCRA, it is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				

Special precautions for user : None reported by the manufacturer.

Environmental hazards : See ECOLOGICAL INFORMATION, Section 12.

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

: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 8 of 10

SAFETY DATA SHEET

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Humic acids	1415-93-6	Yes	N/Ap	N/Av	No	NS
Hydrated amorphous silica	10279-57-9	NL	N/Ap	N/Av	No	NS

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Humic acids	1415-93-6	No	N/Ap	No	No	No	No	No	No
Hydrated amorphous silica	10279-57-9	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Humic acids	1415-93-6	215-809-6	Present	Present		KE-19975	Present	
Hydrated amorphous silica	10279-57-9	N/Av		Present			Present	

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 9 of 10

SAFETY DATA SHEET

DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
IMDG: International Maritime Dangerous Goods
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices
- 2. ECHA - European Chemical Agency
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, (Chempendium, HSDB and RTECs).
- 4. Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists
- 6. California Proposition 65 List
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal

Preparation Date (mm/dd/yyyy)

: 06/04/2021

Other special considerations for handling

: Provide adequate information, instruction and training for operators.



ION-14

SDS Preparation Date (mm/dd/yyyy): 06/04/2021

Page 10 of 10

SAFETY DATA SHEET

<p>Prepared for: Faust Bio-Agricultural Services 6080 Wigrich Rd Independence, OR 97351 Telephone: 1-855-844-4632 Email: registrations@bioag.com Website: www.bioag.com</p>	
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