

**SAFETY DATA SHEET****Zerion® FVS**

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification**Product identifier**

Product name	Zerion® FVS
Product number	375-F-00200, 375-F-00202, 375-F-00203, 375-F-00204, 460-F-00001, 460-F-00001DR, 460-F-00001SS, 460-F-00001TT
Synonyms; trade names	Zerion FVS, Zerion FVS-B15, Zerion FVS-B165, Zerion FVS-B Series, Zerion FVS Demo Kit, Zerion FVS Sleeve Assembly, Zerion FVS-S10 Mesh Sleeve, Zerion FVS-S15 Dual Sleeve Assembly, Zerion FVS S-2 Packet

Recommended use of the chemical and restrictions on use

Application	Corrosion inhibitor.
Uses advised against	Use only for intended applications.

Details of the supplier of the safety data sheet

Manufacturer	Northern Technologies International Corporation 4201 Woodland Rd Circle Pines, MN 55014 - United States 1-763-225-6600 sds@ntic.com
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Emergency telephone number

Emergency telephone	Carechem +1 202 464 2554; Outside US/Canada +44 1865 407333 (24 hours; 7 days/week)
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2. Hazard(s) identification**Classification of the substance or mixture**

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302 Eye Irrit. 2A - H319
Environmental hazards	Not Classified

Label elements**Hazard symbols**

Signal word	Warning
Hazard statements	H302 Harmful if swallowed. H319 Causes serious eye irritation.

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Precautionary statements

P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P330 Rinse mouth.
 P337+P313 If eye irritation persists: Get medical advice/ attention.
 P501 Dispose of contents/ container in accordance with national regulations.

Contains

Ammonium Benzoate

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Ammonium Benzoate CAS number: 1863-63-4	60-100%
Classification Acute Tox. 4 - H302 Eye Irrit. 2A - H319	
Inorganic Carbon Salt CAS number: Proprietary	10-30%
Classification Eye Irrit. 2A - H319	

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

General information

Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation

Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Ingestion

Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact

Brush off loose particles from skin. Rinse with water.

Eye contact

Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

Protection of first aiders

First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information

See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

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Inhalation	Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.
Ingestion	May cause discomfort if swallowed. May cause stomach pain or vomiting.
Skin contact	Prolonged contact may cause dryness of the skin.
Eye contact	Irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards None known.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material.

Environmental precautions

Environmental precautions Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air). Use appropriate containment to avoid environmental contamination.

Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Avoid generation and spreading of dust. Small Spillages: Remove spillage with vacuum cleaner or collect with a shovel and broom, or similar. Large Spillages: Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labeled with correct contents and hazard symbol. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Following dilution, discharge to the sewer with plenty of water may be permitted. The requirements of the local water authority must be complied with if contaminated water is flushed directly to the sewer.

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Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. Avoid handling which leads to dust formation. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Dust may form explosive mixture with air.

Advice on general occupational hygiene Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Protect containers from damage.

Storage class Chemical storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure controls/Personal protection

Control parameters

Occupational exposure limits

Decomposition at ambient temperatures may generate the following substances:
Ammonia.

Exposure controls

Appropriate engineering controls Provide adequate ventilation. Ensure control measures are regularly inspected and maintained.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. Dust-resistant, chemical splash goggles.

Hand protection Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Nitrile rubber.

Other skin and body protection Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures Provide eyewash station and safety shower. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.

Respiratory protection Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m³. Wear a suitable dust mask. Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. In confined or poorly-ventilated spaces, a supplied-air respirator must be worn.

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Environmental exposure controls Keep container tightly sealed when not in use.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Powder.
Color	White.
Odor	Ammonia.
Odor threshold	No data available.
pH	pH (diluted solution): 9-9.5 @ 1%
Melting point	No data available.
Initial boiling point and range	No data available.
Flash point	Not applicable.
Evaporation rate	No data available.
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapor pressure	No data available.
Vapor density	No data available.
Relative density	No data available.
Solubility(ies)	Soluble in water. 250 g/l @ 24°C
Partition coefficient	log Pow: -1.33 (estimated value)
Auto-ignition temperature	No data available.
Decomposition Temperature	No data available.
Viscosity	No data available.
Explosive properties	May form combustible dust concentrations in air.
Oxidizing properties	Not applicable.
Other information	None.

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	Avoid generation and spreading of dust.
Materials to avoid	Strong acids. Strong alkalis.

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Hazardous decomposition products Decomposition at ambient temperatures may generate the following substances: Ammonia.
Thermal decomposition or combustion products may include the following substances:
Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral

Summary Harmful if swallowed.

ATE oral (mg/kg) 1,031.25

Acute toxicity - dermal

Summary Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Summary Based on available data the classification criteria are not met.

Skin corrosion/irritation

Summary Based on available data the classification criteria are not met.

Extreme pH Moderate pH (> 2 and < 11.5).

Serious eye damage/irritation

Summary Causes serious eye irritation.

Respiratory sensitization

Summary Based on available data the classification criteria are not met.

Skin sensitization

Summary Based on available data the classification criteria are not met.

Germ cell mutagenicity

Summary Based on available data the classification criteria are not met.

Carcinogenicity

Summary Based on available data the classification criteria are not met.

IARC carcinogenicity None of the ingredients are listed or exempt.

NTP carcinogenicity None of the ingredients are listed or exempt.

OSHA Carcinogenicity None of the ingredients are listed or exempt.

Reproductive toxicity

Summary Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

Summary Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

Summary Based on available data the classification criteria are not met.

Aspiration hazard

Summary Not relevant. Solid.

General information Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

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Inhalation	Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.
Ingestion	May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.
Skin Contact	Prolonged contact may cause dryness of the skin.
Eye contact	Irritating to eyes.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target Organs	No specific target organs known.

Toxicological information on ingredients.

Ammonium Benzoate

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 825.0

Species Rat

ATE oral (mg/kg) 825.0

12. Ecological information

Ecotoxicity Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

Acute aquatic toxicity

Summary Based on available data the classification criteria are not met.

Acute toxicity - fish LC₅₀, 48 hour: 339 mg/l, Fish
NOEC, : 315 mg/l, Fish
LOEC, : 450 mg/l, Fish

Acute toxicity - aquatic invertebrates LC₅₀, 48 hour: 334 mg/l, Marinewater invertebrates
NOEC, : 315 mg/l, Marinewater invertebrates
LOEC, : 450 mg/l, Marinewater invertebrates

Chronic aquatic toxicity

Summary Based on available data the classification criteria are not met.

Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

Bioaccumulative potential

Bio-Accumulative Potential Bioaccumulation is unlikely.

Partition coefficient log Pow: -1.33 (estimated value)

Ecological information on ingredients.

Inorganic Carbon Salt

Bio-Accumulative Potential No potential for bioaccumulation.

Mobility in soil

Mobility Soluble in water.

Other adverse effects

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Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information Product in unopened original container prior to use does not meet criteria for hazardous waste according to 40 CFR 261 (no components listed on F, K, P or U lists; not ignitable, not corrosive, not reactive and not toxic). Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

Disposal methods Dispose of contents/container in accordance with local regulations. Following dilution, discharge to the sewer with plenty of water may be permitted. The requirements of the local water authority must be complied with if contaminated water is flushed directly to the sewer.

14. Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN Number

UN No. (International) Not applicable.

UN No. (DOT) Not applicable.

UN proper shipping name

Proper shipping name (International) Not applicable.

Proper shipping name (DOT) Not applicable.

Transport hazard class(es)

Transport Labels (International) No transport warning sign required.

DOT transport labels

No transport warning sign required.

Packing group

Packing group (International) Not applicable.

DOT packing group Not applicable.

Environmental hazards

Environmentally Hazardous Substance

No.

Special precautions for user

Not applicable.

DOT reportable quantity Not applicable.

DOT TIH Zone Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

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15. Regulatory information

Regulatory References OSHA Hazard Communication Standard 29 CFR §1910.1200

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed:

Ammonium Benzoate

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed.

SARA 313 Emission Reporting

The following ingredients are listed:

Ammonium Benzoate

1.0 %

CAA Accidental Release Prevention

None of the ingredients are listed.

SARA (311/312) Hazard Categories

Acute toxicity (any route of exposure)

Serious eye damage or eye irritation

OSHA Highly Hazardous Chemicals

None of the ingredients are listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)

None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed.

California Directors List of Hazardous Substances

The following ingredients are listed:

Ammonium Benzoate

Massachusetts "Right To Know" List

The following ingredients are listed:

Ammonium Benzoate

Rhode Island "Right To Know" List

None of the ingredients are listed.

Minnesota "Right To Know" List

None of the ingredients are listed.

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New Jersey "Right To Know" List

The following ingredients are listed:

Ammonium Benzoate

Pennsylvania "Right To Know" List

The following ingredients are listed:

Ammonium Benzoate

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines - PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

Taiwan - TCSI

All the ingredients are listed or exempt.

16. Other information

Abbreviations and acronyms used in the safety data sheet TDG: The transport of dangerous goods act

IATA: International air transport association.

ICAO: Technical instructions for the safe transport of dangerous goods by air.

IMDG: International maritime dangerous goods.

CAS: Chemical abstracts service.

ATE: Acute toxicity estimate.

LC₅₀: Lethal concentration to 50 % of a test population.

LD₅₀: Lethal dose to 50% of a test population (median lethal dose).

EC₅₀: 50% of maximal effective concentration.

PBT: Persistent, bioaccumulative and toxic substance.

vPvB: Very persistent and very bioaccumulative.

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Classification abbreviations and acronyms	Acute Tox. = Acute toxicity Eye Irrit. = Eye irritation
Key literature references and sources for data	Source: European Chemicals Agency, http://echa.europa.eu/
Training advice	Only trained personnel should use this material.
Issued by	HS&E Manager.
Revision date	3/16/2022
Revision	4.4
Supersedes date	7/7/2021
SDS No.	465
Hazard statements in full	H302 Harmful if swallowed. H319 Causes serious eye irritation.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.