



Joe McGaver  
Technical Manager  
Environment  
Environment Projects (US)

tel 713-627-4791  
cell 218-390-9254  
Joe.McGaverr@enbridge.com

Enbridge  
5400 Westheimer CT  
Houston, TX 77056

June 11, 2021

Ben Callan  
Wisconsin Department of Natural Resources  
Chief, Integration Services Section  
Environmental Analysis & Sustainability Program  
101 South Webster Street  
Madison, WI 53707-7921

**Re: Line 5 Wisconsin Segment Relocation Project CN Railroad casing additions**

Dear Ben:

As discussed in Enbridge Energy, Limited Partnership's ("Enbridge") Environmental Information Report ("EIR", Section 4.1) for the proposed Line 5 Wisconsin Segment Relocation Project ("Project"), Enbridge would construct the Project using modern pipeline design, manufacturing, coating, and installation techniques. As a crude oil and Natural Gas Liquid (NGL) pipeline, the Project's design, construction, maintenance, and operation functions are regulated by PHMSA under 49 CFR Part 195, which governs transportation of hazardous liquids by pipeline. The design of the pipeline system would also comply with the industry standards (e.g., American Society of Mechanical Engineers/American National Standards Institute Code B31.4, American Petroleum Institute ("API") 570, API RP 1102, among others).

Section 4.3.12 of the EIR discusses Enbridge's crossing of roads and railroads. The proposed Project will cross four railroad lines owned by the Canadian National Railway company ("CN") located at approximately mileposts ("MP") 15.23, 16.13, 24.15, and 39.22). Enbridge currently plans to complete pipeline installation at two railroad crossings (MP 16.13 and 39.22) using the conventional bore method and two crossings (MP 15.23 and MP 24.15) using the horizontal directional drill ("HDD") method. Enbridge has been in discussion with CN regarding special requirements to cross beneath the railroads. CN will require that the pipeline be installed within a casing pipe to prevent potential settling/subsidence that could affect the integrity of the railroad tracks.

Enbridge is submitting the following supplemental information regarding CN's requirement to install the pipeline in a casing at each of the four proposed crossing locations.

**HDD Crossings:**

Enbridge proposes to case the HDD railroad crossings with a nominal 42 inch outside diameter, API 5L - X70 (70,000 Specified Minimum Yield Strength ("SMYS")) grade pipe with a 0.75 inch wall thickness.

Installation of the casing will occur in the same manner as a conventional HDD. The HDD rig would be used to establish a pilot hole from the drill entry location to the exit location, then a series of reaming tools would be used to expand the diameter of the hole to accommodate the 42-inch diameter casing pipe. The casing pipe would be assembled (strung, welded and inspected) on grade and supported on skids or rollers so that it can be pulled into the final reamed bore hole in one continuous section.

Enbridge would install the casing pipe for the full length of the HDD. Hydrostatic testing of the casing is not required.

Enbridge would assemble the mainline HDD pipeline segment ("carrier pipe") similar to the casing pipe. The mainline pipe specifications would be the same as previously described in Table 4.1-1 of the EIR. Enbridge would test the HDD segment in accordance with the U.S. Department of Transportation pipeline safety regulations, Title 49 CFR Part 195.302(a) requirements, Enbridge testing specifications, and applicable permit conditions to verify the integrity of the pipeline prior to installation. The HDD segment of pipeline would be tested a second time as part of the mainline hydrostatic testing activities. Once assembled and tested, the carrier pipe would be pulled into the casing using wheeled casing spacers. A vapor corrosion inhibitor ("VCI") will be installed on the pipeline at a rate of approximately 0.33 pounds per foot prior to being pulled into the casing. Enbridge proposes to use Zerust Excor Zerion FVS Series as the VCI, which will come in bags to be strapped to the pipeline. The SDS for the Zerust Excor Zerion is attached (Attachment 1). Once the carrier pipe is pulled into the casing, end seals will be installed to make an enclosed system.

#### Conventional Bore Crossings:

Similar to the HDD casing pipe, the casing for the conventional bores underneath the two railways will be a nominal 42 inch outside diameter long seam pipe with a 0.75 inch wall thickness. The pipe grade specified is API 5L - X70 (70,000 Specified Minimum Yield Strength (SMYS)). The casing will be assembled (strung, welded and inspected) on grade supported on skids or rollers so that it can be pulled into the final reamed bore hole in one continuous section. The preassembled carrier pipe would then be inserted into the casing pipe.

For both the HDD and conventional bore casings, Enbridge would install a local anodes corrosion protection system that would remain independent and electrically isolated from the main cathodic protection, impressed current system.

The railroad segments at these crossing locations are in the process of being purchased by a new owner. If the new owner does not require the casings the casings will not be installed.

If you have questions about the information presented in the attached materials, please contact me at (218) 390-9254.

Sincerely,



Joe McGaver, PE  
Technical Manager Environment  
Enbridge Energy, Limited Partnership

#### Enclosures:

- Attachment 1: SDS for Zerust Excor Zerion FVS Series VCI

cc: w/o enclosures: Adam Mednick, Wisconsin Department of Natural Resources  
Bill Sande, U.S. Army Corps of Engineers

## **Attachment 1**

**Line 5 Wisconsin Segment Relocation Project**

**Enbridge Energy, Limited Partnership**

**Zerust Excor Zerion FVS Series**

**Safety Data Sheet**

**SECTION 1: Identification****1.1. Identification**

Product form : Mixture  
Trade name : Zerion® FVS Series  
Synonyms : 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  
Other means of identification : EU SDS: 10-059

**1.2. Recommended use and restrictions on use**

Use of the substance/mixture : Corrosion inhibitors

**1.3. Supplier**

Northern Technologies International Corporation  
4201 Woodland Road  
P.O. Box 69  
Circle Pines, MN 55014 - United States  
T +1 763-225-6600 - F +1 763-225-6645  
[msds@ntic.com](mailto:msds@ntic.com) - [www.zerust.com](http://www.zerust.com)

**1.4. Emergency telephone number**

Emergency number : Carechem +1 202 464 2554; Outside US/Canada +44 1865 407333 (24 hours; 7 days/week)

**SECTION 2: Hazard(s) identification****2.1. Classification of the substance or mixture****GHS-US classification**

Acute toxicity (oral), Category 4 Harmful if swallowed.  
Serious eye damage/eye irritation, Category 2 Causes serious eye irritation.

**2.2. GHS Label elements, including precautionary statements****GHS US labelling**

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning  
Hazard statements (GHS US) : Harmful if swallowed.  
Causes serious eye irritation.  
Precautionary statements (GHS US) : Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear eye protection, protective clothing, protective gloves, face protection.  
If swallowed: Call a doctor, a POISON CENTER if you feel unwell  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Rinse mouth.  
If eye irritation persists: Get medical advice/attention.  
Dispose of contents/container to State or local regulations

**2.3. Other hazards which do not result in classification**

Other hazards not contributing to the classification : May form combustible dust concentrations in air. (DURING FOGGING APPLICATION).

**2.4. Unknown acute toxicity (GHS US)**

Not applicable

**SECTION 3: Composition/information on ingredients****3.1. Substances**

Not applicable

# Zerion® FVS Series

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 3.2. Mixtures

| Name                   | Product identifier     | %       | GHS-US classification                           |
|------------------------|------------------------|---------|---|
| Ammonium benzoate      | (CAS-No.) 1863-63-4    | 50 - 80 | Acute Tox. 4 (Oral), H302<br>Eye Irrit. 2, H319 |
| Inorganic carbon salt* | (CAS-No.) Trade Secret | 20 - 50 | Eye Irrit. 2, H319                              |

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a poison center or a doctor if you feel unwell. Call a POISON CENTER/doctor if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after eye contact : Causes serious eye irritation.
- Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray.

### 5.2. Specific hazards arising from the chemical

- Fire hazard : Avoid dust formation.
- Explosion hazard : May form combustible dust concentrations in air.
- Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

### 5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- Protective equipment : Refer to protective measures listed in Sections 7 and 8.
- Emergency procedures : Evacuate unnecessary personnel. Avoid contact with skin and eyes.

#### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Clean contaminated surfaces with an excess of water. Dispose of in accordance with relevant local regulations.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

# Zerion® FVS Series

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Additional hazards when processed : Dust may form flammable and explosive mixture with air.
- Precautions for safe handling : Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Provide adequate ventilation to minimize dust and/or vapour concentrations. Avoid dust formation.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in original container. Store in a dry place. Store at room temperature. Store in a well-ventilated place. Keep container tightly closed.
- Incompatible products : Strong oxidizing agents. Strong acids.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

| Ammonia (7664-41-7) |                                       |                      |
|---------------------|---------------------------------------|----------------------|
| ACGIH               | ACGIH TWA (ppm)                       | 25 ppm               |
| ACGIH               | ACGIH STEL (ppm)                      | 35 ppm               |
| OSHA                | OSHA PEL (TWA) (mg/m <sup>3</sup> )   | 35 mg/m <sup>3</sup> |
| OSHA                | OSHA PEL (TWA) (ppm)                  | 50 ppm               |
| IDLH                | US IDLH (ppm)                         | 300 ppm              |
| NIOSH               | NIOSH REL (TWA) (mg/m <sup>3</sup> )  | 18 mg/m <sup>3</sup> |
| NIOSH               | NIOSH REL (TWA) (ppm)                 | 25 ppm               |
| NIOSH               | NIOSH REL (STEL) (mg/m <sup>3</sup> ) | 27 mg/m <sup>3</sup> |
| NIOSH               | NIOSH REL (STEL) (ppm)                | 35 ppm               |

- Additional information : Ammonia evolved during use.  
Contains no substances with occupational exposure limits

#### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Provide adequate ventilation to minimize dust and/or vapour concentrations. Provide adequate general and local exhaust ventilation.

#### 8.3. Individual protection measures/Personal protective equipment

##### Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Safety glasses.

##### Hand protection:

Wear protective gloves.

##### Eye protection:

Chemical goggles or safety glasses

##### Respiratory protection:

Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Full face respirator with ammonia cartridges. Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

##### Personal protective equipment symbol(s):



# Zerion® FVS Series

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|  |  |
|--|--|
| Physical state                             | : Solid  |
| Appearance                                 | : Powder.  |
| Colour                                     | : white  |
| Odour                                      | : characteristic                                   |
| Odour threshold                            | : No data available                                |
| pH   | : Not applicable                                   |
| pH solution                                | : 9 - 9.5  |
| Melting point                              | : No data available                                |
| Freezing point                             | : 0 °C Aqueous solution                            |
| Boiling point                              | : No data available                                |
| Flash point                                | : > 100 °C   |
| Relative evaporation rate (butylacetate=1) | : Not applicable                                   |
| Flammability (solid, gas)                  | : Not flammable<br>Not flammable.                  |
| Vapour pressure                            | : No data available                                |
| Relative vapour density at 20 °C           | : Not applicable                                   |
| Relative density                           | : No data available                                |
| Solubility                                 | : Water: 250 g/l                                   |
| Log Pow                                    | : -1.33 (estimated value)                          |
| Auto-ignition temperature                  | : No data available                                |
| Decomposition temperature                  | : No data available                                |
| Viscosity, kinematic                       | : No data available                                |
| Viscosity, dynamic                         | : No data available                                |
| Explosive limits                           | : No data available                                |
| Explosive properties                       | : May form combustible dust concentrations in air. |
| Oxidising properties                       | : No data available                                |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid dust formation. Moisture.

### 10.5. Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6. Hazardous decomposition products

ammonia. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

# Zerion® FVS Series

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| Zerion® FVS Series            |                          |
|-------------------------------|--------------------------|
| ATE US (oral)                 | 1031.25 mg/kg bodyweight |
| Ammonium benzoate (1863-63-4) |                          |
| LD50 oral rat                 | 825 mg/kg                |
| ATE US (oral)                 | 825 mg/kg bodyweight     |
| Inorganic carbon salt         |                          |
| LD50 oral rat                 | > 2000 mg/kg             |

|   |   |
|---|---|
| Skin corrosion/irritation                           | : Not classified<br>pH: Not applicable  |
| Serious eye damage/irritation                       | : Causes serious eye irritation.<br>pH: Not applicable                                    |
| Respiratory or skin sensitisation                   | : Not classified  |
| Germ cell mutagenicity                              | : Not classified  |
| Carcinogenicity                                     | : Not classified  |
| Reproductive toxicity                               | : Not classified  |
| STOT-single exposure                                | : Not classified  |
| STOT-repeated exposure                              | : Not classified  |
| Aspiration hazard                                   | : Not classified  |
| Potential adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. Harmful if swallowed. |
| Symptoms/effects after eye contact                  | : Causes serious eye irritation.  |
| Symptoms/effects after ingestion                    | : Swallowing a small quantity of this material will result in serious health hazard.      |

## SECTION 12: Ecological information

### 12.1. Toxicity

| Zerion® FVS Series             |  |
|--------------------------------|--|
| LC50 fish 1                    | 339 mg/l Menidia beryllina (EPA-821-R-02-012: METHOD 2006) |
| LC50 other aquatic organisms 1 | 334 mg/l Mysidopsis bahia (EPA-821-R-02-012: METHOD 2007)  |
| LOEC (acute)                   | 450 mg/l EPA-821-R-02-12: METHOD 2006                      |
| NOEC (acute)                   | 315 mg/l EPA-821-R-02-012: METHOD 2007                     |

### 12.2. Persistence and degradability

| Zerion® FVS Series            |  |
|-------------------------------|--|
| Persistence and degradability | Preparation based on substances which are readily biodegradable. |

### 12.3. Bioaccumulative potential

| Zerion® FVS Series        |                           |
|---------------------------|---------------------------|
| Log Kow                   | -1.33 (estimated value)   |
| Bioaccumulative potential | Bioaccumulation unlikely. |
| Inorganic carbon salt     |                           |
| BCF fish 1                | (no bioaccumulation)      |

### 12.4. Mobility in soil

| Zerion® FVS Series |                                       |
|--------------------|---------------------------------------|
| Ecology - soil     | Expected to be highly mobile in soil. |

### 12.5. Other adverse effects

Other information : Avoid release to the environment.



# Zerion® FVS Series

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

- Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
- Additional 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).
- Ecology - waste materials : Avoid release to the environment.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT (49 CFR 100-185): Not regulated

#### Transport by sea

In accordance with IMDG: Not regulated

#### Air transport

In accordance with IATA: Not regulated

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Zerion® FVS Series

|                                     |  |
|-------------------------------------|--|
| SARA Section 311/312 Hazard Classes | Health hazard - Serious eye damage or eye irritation<br>Health hazard - Acute toxicity (any route of exposure) |
|-------------------------------------|--|

##### Ammonium benzoate (1863-63-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

|           |         |
|-----------|---------|
| CERCLA RQ | 5000 lb |
|-----------|---------|

##### Inorganic carbon salt

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### Ammonium benzoate (1863-63-4)

Listed on the Canadian DSL (Domestic Substances List)

##### Inorganic carbon salt

Listed on the Canadian DSL (Domestic Substances List)

##### EU-Regulations

##### Ammonium benzoate (1863-63-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Inorganic carbon salt

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### National regulations

##### Zerion® FVS Series

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

# Zerion® FVS Series

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Ammonium benzoate (1863-63-4)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on the TCSI (Taiwan Chemical Substance Inventory)

### Inorganic carbon salt

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the TCSI (Taiwan Chemical Substance Inventory)

### 15.3. US State regulations

### Ammonium benzoate (1863-63-4)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Revision date : 1/29/2019  
Other information : None.

Full text of H-statements:

|      |                                |
|------|--------------------------------|
| H302 | Harmful if swallowed.          |
| H319 | Causes serious eye irritation. |

**DISCLAIMER OF LIABILITY** The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable