

## SAFETY DATA SHEET

According to  
HSNO Hazardous Substances (Safety Data Sheets) Notice 2017

### Section 1. Identification of the material and the supplier

Product: **Slurry Additive**

Other names: Retarder  
Alum Solution  
Break Control Additive  
Aluminum Sulphate Solution

Product Use: Slurry Additive is used for delaying the break time and controlling the workability of bituminous slurry and microsurfacing products used in road construction.

Restriction of Use: Refer to Section 15

New Zealand Supplier: **Higgins Bitumen Manufacturing**  
Address: 26 Waitangi Road  
Awatoto  
Napier 4110, New Zealand

Telephone: +64 6 834 0264  
E-mail: HBM@Higgins.co.nz

**Emergency Telephone: 111 (FIRE POLICE AMBULANCE)  
021 784 057 (National Bitumen Burns Centre)  
0800 764 766 (National Poison Centre)**

Date of SDS Preparation: 8 May 2026

### Section 2. Hazards Identification

**This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.**

EPA Approval No: Additives, Process Chemicals and Raw Materials (subsidiary) – HSR002503

#### Pictograms



Irritant

Signal Word: **Warning**

GHS Classification and Category	Hazard Code	Hazard Statement
Skin irritation Cat. 2	H315	Causes skin irritation.
Eye irritation Cat. 2	H319	Causes serious eye irritation.
Hazardous to the aquatic environment chronic Cat. 3	H412	Harmful to aquatic life with long lasting effects.

Prevention Code	Prevention Statement
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P103	Read label before use.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.

Response Code	Response Statement
P362	Take off contaminated clothing and wash before re-use.
P391	Collect spillage.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Storage Code	Storage Statement
None allocated	

Disposal Code	Disposal Statement
P501	Dispose of according to Local Regulations or Authorities

### Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Aluminum Sulphate	<10	10043-01-3
Other ingredients determined not to be hazardous	>60	

### Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	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.
If on Skin	Take off contaminated clothing and wash before re-use. Wash skin with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
If Swallowed	Do not induce vomiting, flush the mouth with water and give water to drink. Seek immediate medical assistance if any of these symptoms are experienced.
If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult.

#### Most important symptoms and effects, both acute and delayed

Symptoms:

Ingestion:	Ingestion can cause pain, nausea, vomiting or gastrointestinal irritations. Ingestion of large quantities can cause burns to the mouth, bleeding stomach, muscle spasms, incoordination and kidney damage.
Inhaled:	Inhalation of mists and aerosols can cause throat and lung irritations.
Skin:	Causes skin irritation.
Eye:	Causes serious eye irritation.
Long-term effects:	Prolonged exposure can cause irritation and numbing of the fingers. Repeated ingestion can cause phosphate deficiency, which can lead to bone weakening. Ingested material is not easily absorbed.

## Section 5. Fire Fighting Measures

<b>Hazard Type</b>	Non Flammable
<b>Hazards from products</b>	This material is non-combustible. However, aluminum sulphate forms aluminum oxide and sulphur trioxide at temperatures above 650°C.
<b>Suitable Extinguishing media</b>	For large fires use foam or water fog For small fires use CO <sub>2</sub> , dry powder, foam, sand or soil
<b>Precautions for firefighters and special protective clothing</b>	Fire fighters should wear full protective clothing and self-contained breathing apparatus. Aluminum sulphate dissolves in water to form sulphuric acid, which can react with metal containers to produce flammable and explosive hydrogen gas.
<b>HAZCHEM CODE</b>	<b>None Allocated</b>

## Section 6. Accidental Release Measures

Wear suitable personal protective clothing as described in Section 8 to prevent skin or eye contact with the material.

### Small Spills:

Use absorbent material such as sand or soil to contain the spill.

### Large Spills:

If the spill occurs on land, use absorbent material such as sand or soil to contain the spill. Remove the contaminated material and dispose of according to local authority regulations. Do not allow the material to enter storm water drains, sewage drains or the aquatic environment. If a spillage enters the aquatic environment, contain the spill before removing using a pump.

### Environmental Impact:

When present in high concentrations, this product can be harmful to aquatic organisms and should not be allowed to enter storm water, sewage drains or other bodies of water.

### Waste Disposal:

Place contaminated material in disposable containers and dispose of in accordance with Local Authority waste disposal regulations.

## Section 7. Handling and Storage

### Precautions for Handling:

- Read label before use.
- This product may be pumped at temperatures between 5 and 90°C.
- Wash hands before eating, drinking and smoking after handling this product.
- Avoid release to the environment.
- Wear protective clothing as detailed in Section 8.

### Precautions for Storage:

- Store at temperatures between 5°C and 90°C in plastic or stainless steel containers.
- This product is acidic and will corrode mild steel, aluminum, brass or copper containers, drums, pipes and pumps and valves.
- Do not store with incompatible materials listed in Section 10.

## Section 8 Exposure Controls / Personal Protection

### WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
No ingredients have exposure limits				

Workplace Exposure Standard – Short-term exposure limit (WES-STEL). The 15-minute time weighted average exposure standard. Applies to any 15-minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Exposures at concentrations between the WES-TWA and the WESSTEL should be less than 15 minutes, should occur no more than four times per day, and there should be at least 60 minutes between successive exposures in this range. Workplace Exposure Standards and Biological Exposure Indices. February 2025, Edition 15.

## Engineering Controls

No data available

## Personal Protection Equipment



<b>Eyes</b>	Use safety glasses to prevent contact of the product with the eyes.
<b>Hands and Skin</b>	Wear PVC or other impervious gloves when handling the product to prevent contact of the product with the skin. Wear full length overalls that fully cover the arms and legs to prevent contact of the product with the skin. The overalls must be zipped up. It is advisable to wear a hat to prevent splashes causing burns or irritation to the head. Covered waterproof footwear with slip resistant soles is recommended to prevent contact of the product with the skin. Spillages can be slippery.
<b>Respiratory</b>	Respiratory protection or breathing apparatus are not usually required.

## Section 9 Physical and Chemical Properties

<b>Appearance</b>	Transparent liquid
<b>Odour</b>	Not available
<b>Odour Threshold</b>	Not available
<b>pH</b>	2.0 – 4.0
<b>Boiling Point</b>	approx. 100°C
<b>Melting Point</b>	approx. 0°C
<b>Freezing Point</b>	Not available
<b>Flash Point</b>	Not available
<b>Flammability</b>	The product is not flammable.
<b>Upper and Lower Explosive Limits</b>	Not available
<b>Vapour Pressure</b>	2.3 kPa (17mm Hg) @ 20°C (Water)
<b>Vapour Density</b>	Not available
<b>Density @ 25°C</b>	1.0 – 1.1 g/cm <sup>3</sup>
<b>Solubilities</b>	Soluble/miscible in all proportions
<b>Partition Coefficient: N octanol/water</b>	Not applicable
<b>Auto-ignition Temperature</b>	Not applicable
<b>Decomposition Temperature</b>	Not applicable
<b>Viscosity @ 25°C</b>	< 20 cSt
<b>Particle Characteristics</b>	Not applicable

## Section 10. Stability and Reactivity

<b>Stability of Substance</b>	This product is stable under normal conditions.
<b>Reactivity</b>	Reaction with oxidizing agents and alkalis can be exothermic and violent. Reactions with steel and aluminum containers can liberate flammable and explosive hydrogen gas.
<b>Conditions to Avoid</b>	Do not heat above 100°C. Product contains water and open vessels will boil over at temperatures above 100°C. Enclosed vessels will develop hazardous steam pressures when heated above 100°C.

<b>Incompatible Materials</b>	Will corrode mild or carbon steel, aluminum, brass or copper. Avoid contact with strong oxidizing agents or alkalis.
<b>Hazardous Decomposition Products</b>	Will form aluminum oxide and sulphur trioxide at temperatures above 650°C.

## Section 11 Toxicological Information

### Acute Effects:

<b>Swallowed</b>	Not triggered. Oral LD <sub>50</sub> = >9000 mg/kg rat, (49% aluminium sulphate solution) Oral LD <sub>50</sub> = 1930 mg/kg rat, (solid aluminium sulphate) Oral LD <sub>50</sub> = 6207 mg/kg mouse, (solid aluminium sulphate) If ingested in large amounts it can cause pain, nausea, vomiting or gastrointestinal irritations. Ingestion of large quantities can cause burns to the mouth, bleeding stomach, muscle spasms, incoordination and damage to the kidneys, liver and nervous system.
<b>Dermal</b>	Not triggered.
<b>Inhalation</b>	Not triggered however inhalation of mists and aerosols can cause throat and lung irritations.
<b>Eye</b>	Causes serious eye irritation.
<b>Skin</b>	Causes skin irritation. Repeated skin contact can cause skin irritations or dermatitis.

### Chronic Effects:

<b>Carcinogenicity</b>	Not triggered.
<b>Reproductive Toxicity</b>	Not triggered. Causes an increase in chromosomal breaks when tested in rat somatic cells in-vivo and induces sister chromatid exchanges, chromosomal aberrations and micronuclei in human leukocytes under in-vitro conditions.
<b>Germ Cell Mutagenicity</b>	Not triggered. Causes sister chromatid exchanges, chromosomal aberrations and micronuclei in cultured human leukocytes
<b>Aspiration</b>	Not triggered.
<b>STOT/SE</b>	Not triggered.
<b>STOT/RE</b>	Not triggered.

## Section 12. Ecotoxicological Information

Harmful to aquatic life with long lasting effects.

### Toxicity

Aluminum Sulphate	LC50 (12 – 96 hr) = 100mg/L	(Goldfish)
	LC50 (96 hr) = 34mg/L	(Pimephales promelas)
	LC50 (48 hr) = 38mg/L	(Daphnia Magna)

<b>Persistence and degradability</b>	No data available
<b>Bioaccumulation</b>	No data available
<b>Mobility in Soil</b>	Completely soluble in water.
<b>Other adverse effects</b>	No data available

Do not allow to enter waterways.

## Section 13. Disposal Considerations

### Disposal Method:

Dispose of in accordance with local authority regulations. Can also be used in other industries as a water treatment chemical or as an accelerator in concrete. Do not reuse the packaging for containment of drinking water or food products. The container can be recycled through appropriate channels, or disposed of in accordance with local authority regulations.

**Disposal methods to avoid:** Avoid dispersal of spilled material and runoff and contact with

soil, waterways, drains and sewers.

## Section 14 Transport Information

**This product is NOT classified as a Dangerous Good for transport in NZ ; NZS 5433:2020**

## Section 15 Regulatory Information

EPA Approval Code: Additives, Process Chemicals and Raw Materials (subsidiary) – HSR002503

HSWA & EPA Controls	Trigger Quantity
Certified Handler	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	1000 L
Emergency Response Plan	1000 L
Secondary Containment	1000 L
Restriction of Use	None

## Section 16 Other Information

### Glossary

Cat	Category
EC <sub>50</sub>	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LC <sub>50</sub>	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD <sub>50</sub>	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.
TLV	Threshold Limit Value-an exposure limit set by responsible authority.
UEL	Upper Explosive Level
WES	Workplace Exposure Limit

### References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017.
2. EPA Hazardous Substances (Hazard Classification) Notice 2020.
3. Workplace Exposure Standards and Biological Exposure Indices, February 2025 edition 15.
4. Protective Action Criteria (PAC) / Temporary Emergency Exposure Limit (TEEL) Database.
5. Assigning a hazardous substance to HSNO Approval (June 2014).
6. Transport of Dangerous Goods on land NZS 5433:2020.
7. HSW (Hazardous Substances) Regulations 2017.
8. Best Practice Guideline: Safe Handling of Bituminous Materials Used for Roding – BPG01

## Disclaimer

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