SAFETY DATA SHEET

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

Section 1. Identification of the material and the supplier

Product:	**Cutback Bitumen (up to 7%)**
Other names:	**Cutback Bitumen**
Product Use:	Cutback Bitumen are used for the construction of bituminous road and pavement surfaces. The formulations will vary in the ranges shown in Section 3, depending on the type of product.
New Zealand Supplier:	**Higgins Bitumen Manufacturing**
Address:	26 Waitangi Road Awatoto Napier, New Zealand
Telephone:	+64 6 834 1589
E-mail:	HBM@higgins.co.nz
Emergency Telephone:	**0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	17 May 2021

Section 2. Hazards Identification

This substance is NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.

Other Hazards
Risk of burns when handled, stored and transported at elevated temperatures.
There is a risk of water vapour pressure explosion if heated above 100ºC in the presence of water.
Toxic, flammable and explosive levels of hydrocarbon vapour, hydrogen sulphide and other poisonous gases/vapors can accumulate in the head spaces of tanks and other confined spaces when handling hot bitumen.

Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Bitumen	>60	8052-42-4
Kerosene	1-7	8008-20-6

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — If hot material contacts the eyes, immediately cool the affected area under cold water for at least 10 minutes. **DO NOT** attempt to remove the product from burnt areas. Refer to the CCNZ Bitumen Burns Card (see Section 16) and seek immediate medical assistance. Excessive exposure to fumes can cause eye irritations including redness, swelling, stinging and tearing. Remove affected person to a ventilated area. Flood eyes with

plenty of water, holding eyelids open. If irritation due to fumes develops and persists, seek medical attention.

If on Skin — If hot material contacts the skin, immediately cool the affected area under cold water for at least 10 minutes. **DO NOT** attempt to remove the product from burnt areas. Refer to the CCNZ Bitumen Burns Card (see Section 16) and seek immediate medical assistance. Material that contacts the skin at ambient temperatures and **does not** result in burns can be removed using vegetable based oils, or industrial hand cleaners. Do not use thinners or solvents. Repeated skin contact may cause skin irritations or dermatitis.

If Swallowed — Do not induce vomiting, wash out month thoroughly. If symptoms develop seek medical assistance.

If Inhaled — Remove affected person to a ventilated area. If symptoms persist, seek medical advice. If not breathing, apply artificial respiration and seek urgent medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms: Various studies have concluded that there is no evidence of long-term health affects arising from the use of bitumen. Ingestion may cause pain, nausea or gastrointestinal irritations. Do not induce vomiting, seek immediate medical assistance. Inhalation of fumes, mists or aerosols is likely to cause irritations to the nose or throat or coughing. However, in cases were inhalation may have caused an effect, remove the affected persons to a well-ventilated area. If symptoms persist, seek medical advice. If not breathing, apply artificial respiration and seek urgent medical advice.

Section 5. Fire Fighting Measures

Hazard Type	This product contains kerosene and will generate flammable or explosive vapours in the head space of empty or full tanks, containers and vessels, especially when heated. Kerosene vapour is explosive in the 1 – 6% range. Limit oxygen, and maintain 8 metre distance to ignition sources. There is a significant risk of violent explosion if this product is heated above 100°C in the presence of water.
Hazardous Combustion Products:	Complete or incomplete combustion can produce oxides of carbon, sulfur and nitrogen, hydrogen sulphide and polyaromatic hydrocarbons.
Suitable Extinguishing media	For large fires use foam or dry chemicals to extinguish fire. For small fires use CO_2, dry powder, foam, sand or soil. Do not use: Do not use high-pressure water hoses as these may cause the bitumen to react explosively and/or spread the burning material.
Precautions for firefighters and special protective clothing	Fire fighters should wear full protective clothing and self-contained breathing apparatus.
HAZCHEM CODE	2W (if transport in temperatures $>100^0$C)

Section 6. Accidental Release Measures

Wear suitable personal protective clothing as described in Section 8 to prevent skin or eye contact with the material. Whenever possible isolate the cause of the spill (i.e. close valves, empty ruptured vessels etc).

Small Spills:

Use absorbent material such as sand or soil to contain the spill. Allow the material to cure and solidify before removing using a shovel or other suitable equipment.

Large Spills:
If the spill occurs on land, use absorbent material such as sand or soil to contain the spill. Allow the material to cure and solidify before removing using earth moving or excavation equipment. 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:
This product is immiscible with water in all proportions and is harmful to aquatic organisms and should not be allowed to enter storm water, sewage drains or other bodies of water.

Waste Disposal:
This product can be mixed with soil or aggregates and disposed of as clean fill in Local Authority waste disposal facilities.

Section 7. Handling and Storage

Precautions for Handling:

- Use a well-ventilated area. Do not store or use in confined spaces.
- Buildup of mists or vapors in the atmosphere must be prevented. Avoid breathing in spray mists or vapors.
- Do not use welding or other ignition sources and avoid sparks. Do not smoke.
- Wear personal protective clothing when handling (see Section 8).
- Avoid accidental release to the environment.

Precautions for Storage:

- Material can be stored at temperatures between 130 – 160°C. Do not heat above 177°C. If storing for prolonged periods of time it is advisable not to heat product overnight and or unattended.
- Store away from heat, sources of ignition, oxidizing agents, foodstuffs, clothing and out of direct sunlight.
- Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for damages or leaks.
- Do not allow water to contact hot bitumen due to danger of boil over.
- "Code of Practice RNZ9904: The Safe Handling of Bituminous Materials used in Roading" provides more information on the safe handling and storage of bituminous materials.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Bitumen Fumes:	5mg/m^3	8 Hour TWA	(NZ/Australian/UK)
	10mg/m^3	10 min TWA	(UK)
	0.5mg/m^3 Cyclohexane Soluble Fraction		ACGIH (proposed)
Mineral Oil Mist:	5mg/m^3	8 Hour TWA	(NZ)
	10mg/m^3	15 min STEL	(NZ)
Kerosene:	100mg/m^3	8 Hour TWA	(NIOSH)

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute 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. Workplace Exposure Standards and Biological Exposure Indices NOV 2019 11TH EDITION.

Notes:
This product can form mists or aerosols during use.

Engineering Controls
Provide adequate ventilation to ensure fumes remain at a minimum level. Where vapors or mist

are generated, particularly in closed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required. Ensure that product cannot be heated above 160°C.

Personal Protection Equipment

Eyes	Full face shields are required when transferring hot bitumen between vessels using flexible hoses, or when filling mobile tanks.
Hands and Skin	Wear leather or other impervious gloves to prevent burns and splashes when handling hot valves and hoses. Wear full length overalls that fully cover the arms and legs. The overalls must be zipped up. It is advisable to wear a hat to prevent hot bitumen splashes causing burns to the head. The head should be covered when handling bitumen to prevent burns from splashes or accidental release. Wear safety boots that are oil resistant and have slip resistant soles. Overalls should cover the top of the boot.
Respiratory	Respiratory protection or breathing apparatus are not usually required unless engineering controls are inadequate for providing sufficient ventilation.

Section 9 Physical and Chemical Properties

Appearance	Black liquid
Odour	Petroleum solvent odour.
Odour Threshold	Not available
pH	Not available
Boiling Point	approximately 147°C - 199°C for solvent content
Melting Point	Not available
Freezing Point	Not available
Flash Point	>92^{0}C
Flammability	Liquid is combustible Vapour above liquid surface is flammable
Upper and Lower Explosive Limits	1% - 6%for kerosene vapour in air
Vapour Pressure	3.2 mm Hg @ 15°C for solvent content
Vapour Density	Not available
Density @ 20^{0}C	1.00 – 1.05 g/cm^3
Solubilities	Insoluble
Partition Coefficient: N octanol/water	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity (165^{0}C)	Not available
Particle Characteristics	Not applicable

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Reactivity	Violent, explosive reaction when heated above 100°C in the presence of water.
Conditions to Avoid	Do not heat above 177°C.
Incompatible Materials	Product will degrade in presence of strong oxidizing and reducing agents, such as acids and alkalis.
Hazardous Decomposition	Normal combustion forms CO_2, H_2O, NO_x, and SO_x. Incomplete

Products	combustion may produce CO, H_2S, PCA, PAH, and volatile hydrocarbon and particulate matter.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not triggered however ingestion may cause pain, nausea or gastrointestinal irritations. Ingestion of hot bitumen can cause serious burns.
Dermal	Not triggered.
Inhalation	Not triggered however inhalation of fumes, mists and aerosols may cause throat or lung irritations, nausea, headaches, or dizziness. Symptoms are usually alleviated once the affected person is removed to a well-ventilated area.
Eye	Not triggered however excessive exposure to fumes may cause slight to moderate eye irritation including redness, tearing, swelling and stinging. Irritation quickly subsides once removed from the fumes. Contact with hot bitumen can cause serious burns.
Skin	Not triggered however repeated skin contact may cause skin irritations and dermatitis. However, this is possibly caused by use of oils, soaps and detergents that are used to remove material from skin. Contact with hot bitumen can cause serious burns

Chronic Effects:

Carcinogenicity	Not triggered.
Reproductive Toxicity	Not triggered.
Germ Cell Mutagenicity	Not triggered.
Aspiration	Not triggered.
STOT/SE	Not triggered.
STOT/RE	Not triggered.
Chronic	Prolonged and/or repeated skin exposure can cause drying and defatting, possibly leading to irritation and dermatitis. Possible risk of irreversible effects. Numerous studies have concluded that bitumen does not cause any increase in the occurrence of carcinogenic, mutagentic or reproductive toxicity effects in workers. Test data suggests that kerosene does not have any significant mutagenic or reproductive toxicity effects. Limited, but inconclusive data suggests that kerosene may produce some carcinogenic effects.

Section 12. Ecotoxicological Information

May be harmful to aquatic environment when present in sufficiently large quantities.

Persistence and degradability	Based on its use as a road surfacing material, bitumen is expected to be highly persistent and not degradable in the environment.
Bioaccumulation	No data Available
Mobility in Soil	Insoluble in water. Semi-solid at ambient temperature.
Other adverse effects	No data available

Section 13. Disposal Considerations

Disposal Method:
Mix product with sand, soil or aggregate and allow to cure (dry). Dispose of as clean fill in accordance with local authority regulations. Do not dispose of into aquatic environments

including drains, streams, rivers, lakes, ponds or the ocean. See section 6 for additional information. Packaging can often be recycled, otherwise dispose of packaging in a landfill in accordance with local authority regulations.

Disposal methods to avoid: None known.

Section 14 Transport Information

This product is **NOT** classified as a Dangerous Good for transport in NZ ; NZS 5433:2012 **when temperature is below 100°C.**

At temperatures above 100°C the following is applicable**:**
This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2012

Road, Rail, Sea and Air Transport

UN No	**3256**
Class - Primary	**3**
Packing Group	**III**
Proper Shipping Name	**ELEVATED TEMPERATURE LIQUID, N.O.S.**
Marine Pollutant	**No**
Hazchem Code	**2Y**

Section 15 Regulatory Information

This substance is NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.

Section 16 Other Information

Glossary

Cat	Category
EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LC_{50}	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD_{50}	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. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

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Please contact the New Zealand distributor, if further information is required.

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