SAFETY DATA SHEET

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

Section 1. Identification of the material and the supplier

Product: **Flexiphalt® Polymer Modified Bitumen,** including

Flexiphalt 320S	Flexiphalt 330A	Flexiphalt Himod
Flexiphalt 330S	Flexiphalt 340A	Flexiphalt Hiflex
Flexiphalt 340S	Flexiphalt 345A	
Flexiphalt 350S	Flexiphalt 350A	
	Flexiphalt 351A	

Other/Trade Names: Bitumen, Binder, Polymer Modified Bitumen (PMB), Polymer Modified Binder, HiMOD, HiFlex, PG64V, PG64E, PG70V and PG70E.

Product Use: Flexiphalt® Polymer Modified Bitumen is used for the construction of bituminous road and pavement surfaces.

Restriction of Use: Refer to section 15.

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

Telephone: +64 6 834 1589
Email: 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 NOT hazardous according to the EPA Hazardous Substances (Classification) Notice 2020.

	DANGEROUS GOODS. NON-HAZARDOUS SUBSTANCE. Classified as a Dangerous Good according to NZS 5433; 2020. Not classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.
GHS Classification	Not Hazardous
GHS Hazard Statements	PHYSICAL HAZARDS: Not classified as a physical hazard under GHS criteria.
	HEALTH HAZARDS: Not classified as a health hazard under GHS criteria.
	ENVIRONMENTAL HAZARDS: Not classified as an environmental hazard under GHS criteria.
GHS Precautionary Statements:	PREVENTION: No precautionary phrases.
	RESPONSE:

	No precautionary phrases.
	STORAGE: No precautionary phrases.
	DISPOSAL: No precautionary phrases
Symbol(s):	No symbol
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 100°C 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	>80	8052-42-4
Synthetic Polymer	<10	9003-55-8
Other ingredients that do not contribute to hazard classifications	<40	

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 20 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 20 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. Inhalation of fumes, mists or aerosols is likely to cause irritations to the nose or throat or coughing.

Section 5. Fire Fighting Measures

Hazard Type	The unadulterated product is unlikely to cause a fire or explosion hazard under normal conditions of use up to temperatures of 200°C. If the product is blended with flammable solvents such as kerosene, the product should be treated as cutback bitumen and may emit flammable vapors during hot storage. Kerosene vapors may spontaneously ignite and explode during heating or in the presence of an ignition source. 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	2Y (if transport at 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 create a bund and contain the spill. Allow the material to cool and solidify before removing using earth moving or excavation equipment. The product will not mix with water and will form a solid mat on contact with cold water. Therefore, spillages to an aquatic environment should be contained and can easily be cleaned by removing the mat.

Environmental Impact:
Due to the product's high viscosity and low vapour pressure at ambient temperature and pressure, and its immiscibility with water, this product presents a negligible hazard to the environment. However, the viscosity of the product is lowered in the presence of heat and solvents and will become fluid if heated or diluted with solvent sufficiently.

Bitumen can coat aquatic and terrestrial fauna and flora. Contain spillages.

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:

- This product may be pumped at temperatures greater than 150°C.
- Wear personal protective clothing when handling (see Section 8).
- When transferring product, ensure that the receiving vessel is clean and does not contain water.
- If the product is blended with flammable solvents such as kerosene, the flash point and auto-ignition temperature of the blended product will be reduced and may present a significant explosion and fire hazard.
- Treat the blended product as if it were cutback bitumen.
- Eliminate all ignition sources in the presence of cutback bitumen.

Precautions for Storage:

- Bitumen can be stored at temperatures up to 200°C for 24 hours before measureable product degradation occurs.
- Do not heat above 200°C.
- It is advisable to reduce tank temperature to less than 150°C if storing for prolonged periods.
- Store in clean steel tanks
- 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.
- Provide adequate ventilation in enclosed spaces because it is possible for bitumen fumes and gases such as hydrogen sulphide, carbon dioxide and carbon monoxide to accumulate to dangerous levels.
- CCNZ BPG01: Best Practice Guideline: Safe Handling of Bituminous Materials used for 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)

Asphalt Fumes:	0.5mg/m^3	8 Hour TWA	(NZ)
Oil mist, mineral:	5mg/m^3	8 Hour TWA	(NZ)
	10mg/m^3	15 min STEL	(NZ)
Kerosene:	100mg/m^3	8 Hour TWA	(NIOSH)
Carbon Dioxide:	5,000ppm (9000mg/m^3)	8 Hour TWA	(NZ)
	30,000ppm (54,000mg/m^3)	15 min STEL	(NZ)
Carbon Monoxide:	20ppm (200ppm Ceiling)	8 Hour TWA	(NZ)
	100ppm	15 min STEL	(NZ)
Hydrogen Sulphide:	5ppm (7mg/m^3)	8 Hour TWA	(NZ)
	10ppm (14mg/m^3)	15 min STEL	(NZ)

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.

Notes:

It is unlikely that the product will form mists or aerosols during use. However, it may generate decomposition products under heating, which may have specific exposure limits. The decomposition products may include oxides of carbon, nitrogen and sulfur, hydrogen sulfide, and PCAs and PAHs.

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 200°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 odor.
Odour Threshold	Not available
pH	Not available
Boiling Point	>450°C
Melting Point	40°C – 100°C (ASTM D36)
Freezing Point	Not available
Flash Point	> 218°C (ASTM D92)
Flammability	Not flammable, but combustible if heated strongly in the presence of an ignition source.
Upper and Lower Explosive Limits	Not available
Vapour Pressure	<0.75 mm Hg @ 180°C
Vapour Density	Not available
Density @ 25°C	1.01 – 1.05 g/cm³ (ASTM D70)
Density @ 165°C	0.92 – 0.95 g/cm³
Solubility	Insoluble in water
Partition Coefficient: N octanol/water	Not available
Auto-ignition Temperature	>400°C
Decomposition Temperature	Not available
Viscosity (135^{0}C)	<3 Pa.s
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 200°C.
Incompatible Materials	Product will degrade in presence of strong oxidizing and reducing agents, such as acids and alkalis. Bitumen at temperatures above 100°C can form explosive mixtures when contacted with water. **DO NOT** use high pressure water hoses to fight bitumen fire
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, mutagenic or reproductive toxicity effects in workers.

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 cool. 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: Do not incinerate

Section 14 Transport Information

This product is **NOT** classified as a Dangerous Good for transport in NZ ; NZS 5433:2020 **when temperature is below 100ºC.**

At temperatures above 100ºC the following is applicable**:**
This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2020

Road, Rail, Sea and Air Transport

UN No	**3257**
Class - Primary	**9**
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. EPA Hazardous Substances (Hazard Classification) Notice 2020.
3. Workplace Exposure Standards and Biological Exposure Indices, February 2025 edition 15.
4. NIOSH Pocket Guide to Chemical Hazards, National Institute for Occupational Safety and Health (NIOSH).
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. CCNZ, BPG01 - Best Practice Guideline: Safe Handling of Bituminous Materials Used for Roading.

Disclaimer

The information in this data sheet is to the best of Higgins' knowledge representative of the product(s) listed. The composition of natural and processed products do vary, therefore all data contained in this MSDS is subject to variation and is intended for guidance only. As conditions of use are beyond Higgins' control, no liability is implied or accepted for any loss, damage, physical injury, or loss of income sustained from the use of this information or the use of any of Higgins' products.

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