SAFETY DATA SHEET

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

SECTION 1: IDENTIFICATION OF SUBSTANCE AND SUPPLIER

COMPANY DETAILS

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EMERGENCY INFORMATION

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National Bitumen Burns Centre Phone: **+ 021 784 057**
NZ National Poisons Centre Phone: **+ 0800 764 766** (within NZ only)

Product Name: **Asphalt**

Trade Name:							
	Mix 5	DG7	AC7	SP7	SMA5	PA7	EME2
	Mix 10	DG10	AC10	SP10	SMA7	PA10	
	Mix 15	DG14	AC14	SP14	SMA8	PA14	
	Mix 20	DG20	AC20	SP20	SMA10	PA20	
	Mix 40		AC28	SP28	SMA11	EPA7	
					SMA14	EPA10	
					SMA20	EPA14	
						EPA20	

Other Names:
Asphaltic Concrete
Hot Mix
Hot Mix Asphalt, HMA
Warm Mix Asphalt, WMA, WAM

Asphaltic Concrete is 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.

SECTION 2: HAZARDS IDENTIFICATION

Hazardous Substances:
Not classified as a hazardous substance according to the Hazardous Substances (Classification) Notice, 2017.

Other Hazards
Risk of burns when handled, stored and transported at elevated temperatures.
Can emit noxious fumes when hot.

SECTION 3: COMPOSITION

Ingredients:	CAS #	Proportion
Bitumen	8052-42-4	<10%
Mineral Aggregates		>60%
Other ingredients determined not to be hazardous		<10%

SECTION 4: FIRST AID MEASURES

General Advice:
Remove and wash contaminated clothing.

Inhalation:
Inhalation of fumes may cause nausea, headaches, or dizziness. Remove affected persons to a well-ventilated area. If symptoms persist, seek medical advice. If not breathing, apply artificial respiration and seek urgent medical advice.

Skin or Eye Contact:
If hot material contacts the skin or 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 medical assistance as required.

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 in susceptible individuals.

Excessive exposure to fumes may cause eye irritations including redness, swelling, stinging and tearing in susceptible individuals. Remove affected person to a ventilated area.

Ingestion:
Ingestion may cause pain, nausea or gastrointestinal irritations. Do not induce vomiting, give water to drink and seek immediate medical assistance.

Long-term Effects:
Various studies have concluded that there is no evidence of long-term health affects arising from the use of asphalt.

SECTION 5: FIRE FIGHTING

Fire or Explosion Hazard
Combustible solid. Unlikely to cause a fire or explosion hazard under normal conditions of use.

Suitable Extinguishing Media:
For large fires use, foam or water fog
For small fires use CO_2, dry powder, foam, sand or soil

High pressure water hoses can be used provided they do not spread the burning material

Unsuitable Extinguishing Media:
No data.

HAZCHEM Code: 2Y

Hazardous Combustion Products:
Complete or incomplete combustion can produce oxides of carbon, sulfur and nitrogen, hydrogen sulphide and polyaromatic hydrocarbons.

Precautions for Firefighters:
Fire fighters should wear full protective clothing and self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Wear suitable personal protective clothing as described in Section 8 to prevent skin or eye contact or burns from hot material.

Small Spills:
Allow the material to cool and solidify before removing using a shovel or other suitable equipment.

Large Spills:
Allow the material to cool and solidify before removing using earth moving or excavation equipment. If a spillage enters the aquatic environment, contact the appropriate regional council for advice on removing it correctly.

Environmental Impact:
None when cooled.

Waste Disposal:
Cooled product should be loaded to suitable containers and returned to the manufacturer for recycling. Check with relevant authorities before disposing to land fill.

SECTION 7: HANDLING AND STORAGE

Storage:
Material cannot be stored unless kept at an elevated temperature. When allowed to cool it will set to a hard solid. Insulated steel containers or covered tip trucks are recommended.

Handling:
Following manufacturing and during laying the material is hot and can cause severe burns.

Wear personal protective clothing when handling (see Section 8). Avoid accidental release to the environment.

“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 AND 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)
	ACGIH (proposed):	0.5mg/m^3 Cyclohexane Soluble Fraction (CHSF)	
Carbon Monoxide:	20ppm (200ppm Ceiling)	8 Hour TWA	(NZ)
	100ppm	15 min STEL	(NZ)
Carbon Dioxide:	5,000ppm (9000mg/m^3)	8 Hour TWA	(NZ)
	30,000ppm (54,000mg/m^3)	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 –
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 APR. 2022 13TH EDITION.

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. Ensure product cannot be heated above 200°C.

Personal Protection Equipment:

Eye Protection:
Eye protection is required when handling hot product.

Body Protection:
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 contact with hot product.

Hand Protection:
Wear PVC or other impervious gloves to prevent burns when handling hot product.

Foot Protection:

Wear safety boots that are oil resistant and have slip resistant soles. Overalls should cover the top of the boot.

Respiratory Protection:
Respiratory protection or breathing apparatus are not usually required unless engineering controls are inadequate for providing sufficient ventilation. Dust masks should be used when removing old asphalt if dust is generated.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid black mixture of aggregates at ambient temperature.
Odour:	Odourless at room temperature. Odour may become noticeable as the product is heated.
Odour Threshold:	No data
Chemical Nature:	Inert solid at ambient temperature
pH:	Not applicable
Boiling Point:	Not applicable
Softening (Melting) Point:	Not applicable
Flash Point:	No data
Flammability:	Not flammable, but may become combustible if heated strongly in the presence of an ignition source
Lower Flammability Limits:	Not applicable
Upper Flammability Limits:	Not applicable
Vapour Pressure:	< 0.75mm Hg @ 180°C
Vapour Density:	Not applicable
Density @ 25°C:	1.9 – 2.5 g/cm^3
Solubility in Water:	Insoluble/Not miscible
Partition Coefficient:	No data (n-octanol/water)
Autoignition Temperature:	> 400°C
Decomposition Temperature:	No data
Viscosity (25°C):	Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability:
Stable under ambient storage and typical handling conditions.

Conditions to Avoid:
Ensure temperature does not exceed 200°C as oxidation and degradation will occur.

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

Hazardous Reactions:

Violent, explosive reaction when heated above 100°C in the presence of water. Do not allow water to come into contact with hot un-compacted asphalt.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity
Data is not available for the formulated product, but data is presented for a constituent. This product is not classified as toxic under the NZ HSNO regulations. On this basis, oral toxicity is expected to exceed 5000 mg/kg.

Ingredient	Species	Toxicity	Route
Bitumen	LD_{50} (Rat)	>5000 mg/kg	Oral

Ingestion:
Ingestion may cause pain, nausea or gastrointestinal irritations. Ingestion of hot bitumen can cause serious burns.

Inhalation:
Inhalation of fumes may cause nausea, headaches, or dizziness. Symptoms are usually alleviated once the victim is removed to a well-ventilated area.

Skin:
Repeated skin contact can cause skin abrasion, irritations and dermatitis. Contact with hot asphalt can cause serious burns (see Section 4).

Eye:
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 asphalt can cause serious burns (see Section 4) and abrasion.

Long-term Effects (Chronic Toxicity):
Prolonged and/or repeated skin exposure can cause irritation and dermatitis.

Numerous studies have concluded that bitumen does not cause any increase in the occurrence of carcinogenic, mutagentic or reproductive toxicity effects in workers.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
No Data Available

Persistence and Degradability
Based on its use as a road surfacing material, asphalt is expected to be highly persistent and not degradable in the environment.

Mobility
Not dispersible in water. Solid at ambient temperature.

No reports have been found to indicate that significant quantities of hazardous components are leached from the asphalt once it has cured.

Environmental Fate
Asphalt is persistent in the environment.

Bioaccumulative Potential
No Data Available

SECTION 13: DISPOSAL INFORMATION

Disposal
Allow to cool and return to the manufacturer for recycling. Alternatively, dispose of in accordance with local authority regulations. This product can be disposed of as clean fill at landfills and other designated disposal sites.

Packaging
Dispose of in accordance with local authority regulations.

SECTION 14: TRANSPORT INFORMATION

Not classified as dangerous goods for transport in New Zealand.

SECTION 15: REGULATORY INFORMATION

Not classified as a hazardous substance according to the Hazardous Substances (Classification) Notice 2017.

SECTION 16: OTHER INFORMATION

Date of Issue:	28 July 2023
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Glossary

Cat	Category
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
LD_{50}	Lethal dose to kill 50% of test animals/organisms.
STEL	Short Term Exposure Limit.
TEL	Tolerable Exposure Limit.
TWA	Time Weighted Average.
WES	Workplace Exposure Standard.

This SDS has been prepared in accordance with the Hazardous Substances (Safety Data Sheets) Notice 2017.

Further information on the safe storage, use and handling of bitumen that is used in this product can be obtained from "BPG01 (2019): Best Practice Guideline: Safe Handling of Bituminous Materials Used For Roading," which is available through CCNZ (www.nzcontractors.co.nz).

Expert advice on the first aid treatment of bitumen burns is available in the CCNZ Burns Card, which is available from www.nzcontractors.co.nz/Publications

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017.
2. Workplace Exposure Standards and Biological Exposure Indices, April 2022, edition 13.
3. Assigning a hazardous substance to a HSNO Approval (June 2014).
4. Transport of Dangerous goods on land NZS 5433:2012.
5. HSW (Hazardous Substances) Regulations 2017.

DISCLAIMER

The information in this SDS 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 SDS 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.