



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE SUPPLIER

1.1 Product Name: Class 170 Bitumen

1.2 Recommended Use: Bitumen that is suitable for use in tropical climates for sealing work and making asphalt concrete, and is also suitable for waterproofing

1.3 Company Name; Address and Contact Details

New Zealand	Fiji
Technix Taranaki Terminal Limited Hutchen Place West, Port Taranaki New Plymouth, New Zealand +64 6 7598700 ext 700	Technix Pacific Limited Private Mail Bag GPO Lot 6 & 7 Retriever Street Rokobilli Terminal Walu Bay, Suva, Fiji Tel: +679 331 2678

1.4 After Hour Mobile Contact Details: +64 21 867 640 (New Zealand)
+679 9922270 (Fiji)

2. HAZARDS IDENTIFICATION

2.1 Hazard Classification: non-hazardous substance defined by the New Zealand Hazardous Substances (Minimum Degree of Hazard) Regulation 2001. Hot bitumen is a dangerous good according to Land Transport Rule: Dangerous Goods 2005.

2.2 Other Hazard Information:

Physical/Chemical Hazards:

- Thermal burn hazard - contact with hot material may cause thermal burns

Health Hazards:

- Inhalation: May cause irritation of the respiratory tract
- Eye Contact: Severe burning will result if hot bitumen comes in contact with eyes
- Skin Contact: Hot bitumen will cause severe burns
- Ingestion: Ingestion of hot bitumen is extremely unlikely, risks are internal bleeding from the hot product

2.3 Environmental Hazards: No significant hazards

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product contains no hazardous materials.

4. FIRST AID MEASURES

SEE BITUMEN BURN SHEET

4.1 Eyes: Immediately flush eye with cool water. Continue flushing for at least 20 minutes. Do not attempt to remove bitumen. Seek medical help

- 4.2 Skin:** If the bitumen is hot, cool the affected area by drenching in cold, preferably running water until the bitumen becomes hard. Do not attempt to remove bitumen from affected area. Seek medical assistance as soon as possible. DO NOT USE WATER UNDER PRESSURE. WATER SHOULD TRICKLE OVER THE BURNT AREA.
- 4.3 Inhalation:** Evacuate contaminated area. Move affected person to well-ventilated area and seek medical advice. For those providing assistance, DO NOT exposure to yourself or others. Use adequate respiratory protection. If person is not breathing, apply artificial respiration equipment and get immediate medical attention.
- 4.4 Ingestion:** Do not induce vomiting, seek medical help immediately

5. FIRE FIGHTING MEASURES

- 5.1 Flash Point:** >250 °C or 482 F
- 5.2 Flammable Limits (Approximate volume % in air):** LEL: 0.5 UEL: 5.0
- 5.3 Extinguishing Media:** Use dry chemical, carbon dioxide (CO₂), or a dry, non-combustible material such as dry sand or earth to extinguish flames.
- Inappropriate Extinguishing Media: DO NOT USE WATER.
- Hazardous Combustion Products: May produce Hydrogen Sulphide, Smoke, Fume, Aldehydes, Sulphur Oxides, Incomplete Combustion Products Oxides of carbon
- 5.4 Special Fire Fighting Procedures:** Keep pipelines, fire exposed surfaces, and/or storage tanks cool with water spray. Contain any leaks and remove sources of ignition

6. SPILLAGE, ACCIDENTAL RELEASE MEASURES

- 6.1 Protective Measures:** Avoid contact with spilled material. See Section 5 for firefighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment (PPE). Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

FOR EMERGENCY RESPONDERS:

Respiratory Protection: half-face or full-face respirator with filter(s) for organic vapour and, when applicable, H₂S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Chemical goggles and face shield are recommended if contact of eyes with hot product or vapours is possible.

Small spills: normal PPE clothes are usually adequate.

Large spills: full body suit of chemical and thermal resistant material is recommended. Work gloves (preferably gauntlet style) that provide appropriate chemical resistance.

Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. If contact with hot product is possible or anticipated, heat-resistant and thermally insulated gloves are recommended.

6.2 Spill Management:

Land Spill: Stop leak if you can do so without risk. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Vapour-suppressing foam may be used to reduce vapour. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Consult a local expert.

Water Spill: Stop leak if you can do so without risk. Material will sink. Consult an expert.

6.3 Environmental Precautions:

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

6.4 Hazchem Code: 2W

7. HANDLING AND STORAGE

7.1 Handling: Avoid vapour from heated materials to prevent exposure to potentially toxic/irritating fumes. Hydrogen sulphide (H₂S) may be given off when this material is heated. Do not depend on sense of smell for warning. When heating to normal handling temperatures, avoid local overheating. Use only with adequate ventilation. Prevent small spills and leakage to avoid slip hazards.

7.2 Storage: Non-absorbent insulation such as foam glass is recommended for tankage and piping. Do not store in open or unlabelled containers. Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Keep tanks covered and containers tightly closed when not in use. Bulk storage tanks should be diked (bunded). Do not smoke in storage areas. Hydrogen sulphide may accumulate in tanks during long term storage at high temperatures. For this reason, tank vapour spaces should be regarded as hazardous.

8. EXPOSURE CONTROL /PERSONAL PROTECTION

8.1 Exposure Limit

Substance Name	Form	Limit/Standard			Note	Source	Year
Bitumen fumes	Fume.	TWA	5 mg/m ³			New Zealand OELs	2011
Bitumen fumes [benzene solubles]	Inhalable fraction.	TWA	0.5 mg/m ³			ACGIH	2012
Hydrogen sulphide		STEL	21 mg/m ³	15 ppm		New Zealand OELs	2011
Hydrogen sulphide		TWA	14 mg/m ³	10 ppm		New Zealand OELs	2011
Hydrogen sulphide		STEL	14 mg/m ³	10 ppm		ExxonMobil	2012
Hydrogen sulphide		TWA	7 mg/m ³	5 ppm		ExxonMobil	2012
Hydrogen sulphide		STEL	5 ppm			ACGIH	2012
Hydrogen sulphide		TWA	1 ppm			ACGIH	2012

8.2 Personal Protection Equipment (PPE)

General Protective Equipment:

- Guarantee suitable ventilation at workplace.
- Do not carry product impregnated cleaning clothes in trouser pockets.
- Wash hands before breaks and at end of work.
- Do not eat or drink while working. Keep away from foodstuffs, beverages and feed

Respiratory Protection: No respiration protection is ordinarily required under normal conditions of use. If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Positive-pressure, air-supplied respirator in areas where H₂S vapours may accumulate is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filters capacity/rating may be exceeded.

Protective Clothing:

- Protection of hands: Avoid skin and eye exposure. If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves. Always seek advice from the gloves supplier.
- Protection of legs: To protect legs and foot, chemical and heat resistant boots (leg over boots) are recommended.
- Protection of eyes: If contact with material may occur, safety glasses; protective balaclava and face shield are recommended.
- Protection of body: Wear heat-resistant protective clothing. Heat resistant overalls are recommended. Thermally protective, chemical resistant apron and long sleeves should be worn.

Personal protection equipment should be referred to national standard when it is applicable

8.3 Other Protective Measures: Gas test must be done to ensure acceptable levels are maintained and special ventilation may have to be provided. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

8.4 Environmental Exposure controls: Comply with applicable environmental regulations limiting discharge to air, water and soil. Eye washes and showers for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance: Black viscous liquid, appears solid at ambient temperature

9.2 Specific Gravity (H₂O=1): 1.02 at 15°C

9.2 Solubility in H₂O, % by Volume: Insoluble

9.3 Penetration: 70-100 dmm

9.4 Softening Point: 48 °C

9.5 Viscosity: At 60°C: 140-200 Pa.s
At 135°C: 0.25-0.45 Pa.s

10. STABILITY AND REACTIVITY

10.1 Stability: Material is stable under normal conditions.

10.2 Conditions to Avoid: Contact of hot product with water. Overheating.

10.3 Materials to Avoid: Halogens, Alkalies, Strong acids, Strong oxidisers

10.4 Hazardous Decomposition Products: Material does not decompose at ambient temperatures.

10.5 Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

11.1 For The Product Itself: May contain low levels of polycyclic aromatic compounds (PACs), some of which are suspected of causing cancer under conditions of poor industrial hygiene and prolonged repeated contact. These PACs may also be inhaled. Inhalation studies at high concentrations of fumes resulted in bronchitis, pneumonitis, fibrosis and cell damage. Avoid contact with the asphalt emissions.

11.2 Hydrogen Sulphate: Refer to Hydrogen sulfate SDS

11.3 Emissions: (generated from heated bitumen product): According to the International Agency for Research on Cancer (IARC), certain specific occupational uses of bitumen products may result in carcinogenic hazards, as follows: (a) Occupational exposures to oxidized bitumens and their emissions during roofing are 'probably carcinogenic to humans' (Group 2A), (b) occupational exposures to hard bitumens and their emissions during mastic asphalt work are 'possibly carcinogenic to humans' (Group 2B), and (c) occupational exposures to straight-run bitumens and their emissions during road paving are 'possibly carcinogenic to humans' (Group 2B). These levels of hazard identified by IARC are associated with the specified occupational uses which require heating. Oxidized asphalts have been defined as having a Penetration Index (PI) of > 2.0.

Additional information is available by request.

12. ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

12.1 Eco-toxicity:

Material: Not expected to be harmful to aquatic organisms.

12.2 Mobility

Majority of Components -- Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

Material -- Low potential to migrate through soil.

12.3 Persistence and Degradability

Biodegradation:

Material: Expected to be persistent.

12.4 Bioaccumulation Potential

Material: Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

13. DISPOSAL CONSIDERATIONS

Follow the state or local authority regulations for disposal of waste product. Do not allow product to run into local waterways.

13.1 Empty Container Warning: Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractors and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

14. TRANSPORT INFORMATION

14.1 Land

Proper Shipping Name: ELEVATED TEMPERATURE LIQUID, N.O.S. (Bitumen)

Hazard Class: 9

Hazchem Code: 2W

UN Number: 3257

Packing Group: III

Class / Mark(s): 9

14.2 Sea (IMDG)

Proper Shipping Name: ELEVATED TEMPERATURE LIQUID, N.O.S. (Bitumen)

Hazard Class & Division: 9

EMS Number: F-A, S-P

UN Number: 3257

Packing Group: III

Label(s): 9

Transport Document Name: UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S. (Bitumen), 9, PG III

14.3 Air (IATA)

Proper Shipping Name: NOT STANDARD PRACTICE

Hazard Class & Division:

UN Number:

Packing Group: (N/A)

Label(s) / Mark(s):

15. REGULATORY INFORMATION:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Material is Not Hazardous as defined by the New Zealand Hazardous Substances (Minimum Degree of Hazard) Regulation 2001.

Product is regulated according to New Zealand Land Transport Rule.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: AICS, DSL, TSCA

16. OTHER INFORMATION:

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to the best of the company's knowledge and is believed to be accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.