

SAFETY DATA SHEET

1. IDENTIFICATION THE SUBSTANCE / PREPARATION OF THE COMPANY / UNDERTAKING

Product Name: **ESTOLIASIC**
Application: Hot-poured joint sealant
Company: Denka Construction Solutions Malaysia Sdn Bhd
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2. HAZARD IDENTIFICATION

A. Hazard Risk Classification

- Health Hazard
 - Eye Irritation : Category 2
 - Skin Sensitisation : Category 1
 - Acute Toxicity-Oral : Category 4
 - Aquatic Toxicity-Acute : Category 2

B. Label elements including precaution statements.

- Symbol:



- Signal word: Warning
- Hazard Risk Statement
 - H302 Harmful if swallowed.
 - H317 May cause an allergic skin reaction
 - H319 Causes serious eye irritation.
 - H400 Very toxic to aquatic life.
- Precautionary Statement (Prevention)
 - P201 Obtain special instruction before use.
 - P202 Do not handle until all safety precautions have been read and understood.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.
- Response
 - P391 Collect spillage
 - P308 + P313 If exposed or concerned: Get medical advice/attention
- Storage
 - P402 + P403 Store in a dry place. Ventilated place away from sources of excessive heat.
- Disposal
 - P501 Dispose of contents/container to an approved waste disposal plant.

Other Hazards	: According to the applicable law, oxidised bitumen is not classified as a hazardous materials.
	: Studies in animals have shown that repeated exposure to its vapours may produce a weak carcinogenic response (refer to Section 11 – Toxicological Information)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	Cas Number	%
Oxidised Bitumen	64742-93-4	>95
Epoxidized Palm Oil	NE	<10
Styrene-Butadiene-Styrene Copolymer	9003-55-8	<5

Sulphur (H₂S) is naturally present in bitumen.

When heated, transferred or carried on a tanker, hot bitumen may give hydrogen sulphur fumes.

4. FIRST AID MEASURES

Eyes:	Irrigate thoroughly with plenty of water for at least 10 minutes. Seek medical attention if soreness or redness persist.
Skin:	Flush with running water for 10 minutes. No attempt should be made to remove firmly adhering bitumen from skin. Seek medical attention if soreness or redness persist.
Inhalation:	Remove to fresh air. If symptoms are severe or persistent, seek medical attention.
Indigestion:	Wash out mouth with water. Do not induce vomiting. Seek medical attention immediately if any material enter the lungs during swallowing or vomiting.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Carbon dioxide, dry powder, foam and sand/earth – Do not use water jets on the surface of molten bitumen due to hazard of violent splatter of hot bitumen.
Unusual Fire Hazard:	Foaming and splatter occur when warm bitumen has contact with water. During fire, released gases and vapour are heavier than air resulting in depressions spread just above the ground within a certain distance from the source of fire and a new combustion hazard.
Special Protective Equipment:	Self-contained breathing apparatus and full protective clothing in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Protective Measures:	Avoid contact with eyes, skin and inhalation of vapour (Refer to Section 8 – Exposure Controls/Personal Protection). Shut off leaks, if possible without personal risk. Remove all possible sources of ignition in the surrounding area. Use appropriate containment of product and firefighting.
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Personal Precautions:	Wear suitable protective clothing, gloves and eye / face protection.
Environmental Precautions:	Prevent entry into drain, sewers and water courses by using sand/earth or other appropriate barriers.
Clean up Procedures:	Attempt to disperse or direct its flow to a safe location. For small spills, transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Remove contaminated soil and appropriate absorbent material for safety disposal (Refer to Section 13 – Disposal Considerations) Shovel/scoop into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

7. HANDLING AND STORAGE

Handling:	Avoid contact skin and eye contact. Avoid contact with hot bitumen to prevent thermal burns. Maintain good standards of personal hygiene. Ensure adequate ventilation.
Storage:	No special precautions when stored in solid state. Stored in cool, dry area away from naked flame.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Components	Exposure Limits (OSHA PEL)		
	TWA	STEL	Unit
Bitumen	5 fume	10 fume	mg/m ³
Rubber Fume	0.6 dust	NE	mg/m ³
Sulphur	7 dust	14 dust	mg/m ³

Exposure Limits:	None assigned.
Engineering Control Measures:	Observe basic occupational health and safety rules.
Respiratory Protection:	Use suitable respiratory protective equipment. Must be used if vapour levels are high, especially in enclosed areas.
Skin Protection:	Should wear overalls and suitable heat-resistance gloves.
Eye Protection:	Should wear goggles or face shield to protect eyes from splashes of molten bitumen.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Colour	Black
Odour	Characteristic bitumen
Flash Point, °C	>250 (Cleveland Open Cup)
Softening Point, °C	101.3
Water Solubility	Insoluble
Autoflammability, °C	>400
Relative Density @ 25 °C	1.01 – 1.08 g/cm ³

10. STABILITY AND REACTIVITY

Stability:	The product is stable under normal conditions.
Reactivity:	Not classified as self-reactive.
Hazardous Polymerization:	Will not occur.
Condition to Avoid:	Do not store in temperatures above 250°C.
Materials to Avoid:	Avoid overheating.
Incompatible Materials:	Oxidising agents, strong acids and alkalis.
Hazardous Decomposition Products:	Unknown.
Hazardous Reaction:	No dangerous reactions known.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 (Oral, rat):	>5000 mg/kg
LD50 (Dermal, rabbit):	>2000 mg/kg
LC50 (Inhalation, rat):	>10000 mg/kg

Eye Irritation: Product is not irritant (OECD 405 test).
May cause eye damage in high temperatures.

Skin Irritation: Product is not irritant (OECD 404 test).
Prolonged exposure to bitumen may cause acne-like skin changes, excessive skin keratosis and black chromatosis.
In high temperatures, it may cause thermal burns and irritation of the respiratory tract.

Respiratory: Not found (OECD 406 test).

Germ Cell Mutagenicity: Not found (In Vitro ad Vivo research).

Carcinogenicity: Does not meet criteria for classification as carcinogen.
Having regard to skin cancers resulting from whole-life exposure to the condensate (application temperature above 250 °C) of oxidised bitumen vapours, the substance is considered to have a weak carcinogenic effect on animals test.
The significance of the data for human is considered uncertain.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish: LL50 (Oncorhynchus mykiss (rainbow trout)) : >1000 mg/l
Exposure time: 96 hr

Toxicity to daphnia and: LL50 (Daphnia magna (water flea)) : >1000 mg/l
other aquatic invertebrates Exposure time: 48 h

Toxicity to algae: EL50 (Pseudokirchneriella subcapitata (microalgae)) : 1000 mg/l
Exposure time: 72 h

Toxic to microorganisms: LL50 (Tetrahymena pyriformis)) : >1000 mg/l
Exposure time: 40 h

Toxicity to fish (Chronic): NOEC : >0.1 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)

Persistence and degradability

Biotic:
Biodegradation potential
Activated sludge simulation test

Not applicable – UVCB Substance
Not applicable – UVCB Substance

Abiotic:
Hydrolysis as pH function
Photolysis/phototransformation

Does not occur
Does not occur

Bioaccumulative potential

Bioaccumulation
Partition coefficient n-Octanol/water

Not applicable – UVCB Substance
Pow:>6. Method: No information available

Mobility in soil

Adsorption/desorption test

Not applicable – UVCB Substance

Other adverse effects

Additional ecological information

None.

13. DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible.
Waste in small quantities should not be poured into drains, sewers or watercourse for disposal.
The material when mixed properly and cured at the proper mix ration may be safely landfilled.
Waste disposal method in accordance with all applicable local, national environmental laws and regulations.

14. TRANSPORT INFORMATION

International Regulation

UNRTDG	Not classified as dangerous for transport
IATA-DGR	Not classified as dangerous for transport
IMDG-Code	Not classified as dangerous for transport

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable for product as supplied.

15. REGULATORY INFORMATION

Risk/Safety Phrases : Not classified as dangerous under EC criteria.

S25 : Avoid contact with eyes.

R27 : Remove all contaminated clothing immediately.
R28 : ash with detergent upon contact with skin immediately.
R38 : Irritating to skin
R43 : May cause sensitization by skin contact.
R37/38/39 : Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

The data and advice given apply when the product is used for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet. The product should not be used than for the stated application or applications without seeking advice from Denka Construction Solutions Malaysia Sdn Bhd.

If this product has been purchased to a third party for use at work, it is the purchaser's duty to take all necessary steps to secure that any person handling or using the product is provided with information in this sheet. It is the responsibility and duty of the employer to inform employees and others who may be affected of any hazards described to this sheet and of any precautions which should be taken. This sheet does not constitute or substitute for the users own assessment of workplace risk, as required by other health and safety legislation.

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