

SAFETY DATA SHEET

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

Product Name: **ESTOJOINT**
 Application: Hand Applied Flexible Bituminous Putty
 Company: **Denka Construction Solutions Malaysia Sdn Bhd**
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2. HAZARD IDENTIFICATION

A. Hazard Risk Classification

- Physical Hazard
 Classification of substance Not Classified
- Health Hazard

Acute Toxicity - Oral	Category 4
Skin Sensitization	Category 1
Eye Damage/Irritation	Category 2
Aquatic Toxicity – acute	Category 2

B. Label elements including precaution statements.

- Symbol:



- Signal word: Warning
- Precautionary Statement
(Prevention)

P280 Wear protective gloves/ protective clothing/eye protection/face protection.
 P201 Obtain special instruction before use
 P202 Do not handle until all safety precautions have been read and understood

(Response)

P308 + P313 IF exposed or concerned: Get medical advice/attention
 Collect/clean up spillage

(Storage)

Store in a dry, 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

Chemical Name	CAS No.	Content, %
Oxidised Bitumen	64742-93-4	>95
Epoxidized Palm Oil	NE	>10
Styrene-Butadiene-Styrene Copolymer	9003-55-8	< 5

4. FIRST AID MEASURES

Eye contact:	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: Use dry chemical powder, foam, carbon dioxide and sand/earth.

Unsuitable Extinguisher Media Do not use dense water streams on the surface of molten bitumen due to the hazard of violent splatter of hot bitumen.
Water may be used to cool down warm surfaces during application only.

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.
As a result of the fire, the following compounds are formed: carbon monoxide (CO) and a compound mixture of bitumen millings and depending on the composition, small amounts of sulphur dioxide (SO₂), nitric oxides (NO) and metallic oxide fumes.

Protective Equipment for Firefighters 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 risks.
Remove all possible sources of ignition in the surrounding area.
Use appropriate containment of product and firefighting measures to avoid environment contamination.
Prevent from spreading or entering drains, ditches or river by using sand/earth or other appropriate barriers.

Clean up Methods 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 with eyes and skin (Refer to Section 8- Exposure)
Avoid contact with hot bitumen to prevent thermal burns.
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)		Unit
	TWA	STEL	
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	Suitable respiratory protective equipment (i.e. Chemical cartridge respirator or self-contained breathing apparatus) must be used if vapour levels are high, especially in enclosed areas.		
Skin Protection	Operator handling the material should wear overalls and suitable heat-resistance gloves.		
Eye Protection	Operator should wear goggles or face shield to protect eyes from splashes.		
Others	None.		

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State :	Solid
Colour :	Black.
Odour :	Characteristic bitumen.
Softening Point :	Refer to Product Specification.
Penetration Point:	Refer to Product Specification.
Relative Density:	1.01 - 1.08 g/cm ³ @ 25°C.
Volatile Matter :	Refer to Product Specification.
Flash Point :	> 260°C (Cleveland Open Cup)
Water Solubility :	Insoluble.
Autoflammability (°C):	> 400°C
Explosive Properties (%):	Not Applicable.

10. STABILITY AND REACTIVITY

Reactivity:	Not classified as self-reactive.
Stability:	The product is stable under normal conditions Stable during storage and handling under predicted temperature and pressure.
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 (Refer to Section 5-Fire Fighting Measures).
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 and 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)) : > 1,000 mg/l
Exposure time : 96 h

Toxicity to daphnia and other aquatic invertebrates LL50 (Daphnia magna (water flea)) : > 1,000 mg/l
Exposure time : 48 h

Toxicity to algae EL50 (Pseudokirchneriella subcapitata (microalgae)) : > 1,000 mg/l
Exposure time : 72 h

Toxicity to microorganisms LL50 (Tetrahymena pyriformis) : > 1,000 mg/l
Exposure time : 40 h

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

Persistence and degradability	
Biodegradation potential:	Not applicable - UVCB Substance.
Activated sludge simulation test	Not applicable - UVCB Substance.
Hydrolysis as pH function	Does not occur.
Photolysis/phototransformation	Does not occur.
Bioaccumulative potential	
Bioaccumulation	Not applicable - UVCB Substance.
Partition coefficient n-Octanol/water	Pow : > 6
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

15. REGULATORY INFORMATION

Risk/Safety Phrases

Not classified as dangerous under current EC criteria.

R38	:	Irritating to the skin.
R43	:	May cause sensitization by skin contact.
S25	:	Avoid contact with eyes.
S27	:	Remove all contaminated clothing immediately.
S28	:	Wash with detergent upon contact with skin immediately.
S37/38/39	:	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.

SDS: **Estojoint**
Date Printed: **25/09/2025**
Revision: **04**



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