

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in the United Kingdom & Ireland.

PRODUCT

Product Name: PAVING BITUMEN 160/220 GB
Product Description: Asphalt/Bitumen
Product Code: 101090301026, 7036288-60
Intended Use: Mainly used for road paving, Miscellaneous industrial applications

COMPANY IDENTIFICATION

Supplier: TENNANTS BITUMEN
9 AIRPORT ROAD WEST
BELFAST
BT3 9ED

Environmental / Health Emergency Telephone 0044 2890 455135
e-mail INFO@CTNI.CO.UK

SECTION 2 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

PHYSICAL / CHEMICAL HAZARDS

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

HEALTH HAZARDS

Exposure to high fume concentrations from heated asphalt may cause eye and respiratory tract irritation. Low order of toxicity. Hydrogen sulphide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulphide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odour does not provide a reliable indicator of the presence of hazardous levels in the atmosphere.

Note: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 4 FIRST AID MEASURES

INHALATION

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Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

SKIN CONTACT

Wash contact areas with soap and water. If burned by contact with hot material, molten material adhering to skin should be cooled as quickly as possible with water, and see a physician for removal of adhering material and treatment of burn.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate 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.

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Hydrogen Sulphide, Smoke, Fume, Aldehydes, Sulphur Oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: >220C (428F) [EN/ISO 2592]

Flammable Limits (Approximate volume % in air): LEL: 0.5 UEL: 5.0

Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do so without risk. Do not touch or walk through spilled material. Prevent entry

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into waterways, sewer, basements or confined areas. A 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.

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

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

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

SECTION 7 HANDLING AND STORAGE

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 hazard.

Loading/Unloading Temperature: > 90°C (194°F)

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

Storage Temperature: < 190°C (374°F)

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard	Note	Source	Year
Asphalt fumes	Fume.	STEL 10 mg/m ³		UK EH40	2007
Asphalt fumes	Fume.	TWA 5 mg/m ³		UK EH40	2007
Asphalt fumes [benzene solubles]	Inhalable fraction.	TWA 0.5 mg/m ³		ACGIH	2009
Hydrogen Sulphide		STEL 14 mg/m ³ 10 ppm		UK EH40	2007
Hydrogen Sulphide		TWA 7 mg/m ³ 5 ppm		UK EH40	2007
Hydrogen Sulphide		STEL 15 ppm		ACGIH	2009
Hydrogen Sulphide		TWA 10 ppm		ACGIH	2009

Note: Information about recommended monitoring procedures can be obtained from the relevant

agency(ies)/institute(s):
UK Health and Safety Executive (HSE)

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:
No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: 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. European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

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 filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves. CEN standards EN 420 and EN 374 provide general requirements and lists of glove types.

Eye Protection: If contact with material may occur, safety glasses and face shield are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

Specific Hygiene Measures: 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.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Solid
Colour: black
Odour: Petroleum/solvent
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 25 C): 1 - 1.1
Flash Point [Method]: >220C (428F) [EN/ISO 2592]
Flammable Limits (Approximate volume % in air): LEL: 0.5 UEL: 5.0
Autoignition Temperature: N/D
Boiling Point / Range: > 400C (752F)
Vapour Density (Air = 1): > 1 at 101 kPa
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20°C
Evaporation Rate (N-Butyl Acetate = 1): N/A
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 6
Solubility in Water: Negligible
Viscosity: [N/A at 40°C] | 135 cSt (135 mm²/sec) at 135C
Oxidising properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/A
Melting Point: N/A

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.
CONDITIONS TO AVOID: contact of hot product with water., Overheating.
MATERIALS TO AVOID: Contact with water. Halogens, Alkalies, Strong Acids, Strong oxidisers
HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
INHALATION	
Toxicity: LC50 > MAXCONC	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on test data for structurally similar materials.

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INGESTION	
Toxicity: LD50 > 5000 mg/kg	Minimally Toxic. Based on assessment of the components.
Skin	
Toxicity: LD50 > 5000 mg/kg	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation: No end point data.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

CHRONIC/OTHER EFFECTS

For the product itself:

Asphalt: 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 and inhalation of vapour or aerosol from it.

Contains:

HYDROGEN SULPHIDE: Chronic health effects due to repeated exposures to low levels of H₂S have not been established. High level (700 ppm) acute exposure can result in sudden death. High concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of overexposure to H₂S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucous membranes and the respiratory system and have been implicated in some eye damage.

Additional information is available by request.

SECTION 12 ECOLOGICAL INFORMATION

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

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

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

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be persistent.

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 05 01 17

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

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 contractor 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.

SECTION 14 TRANSPORT INFORMATION

LAND (ADR/RID)

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

Hazard Class: 9

Classification Code: M9

UN Number: 3257

Packing Group: III

Label(s) / Mark(s): 9 (ET)

Hazard ID Number: 99

CEFIC Tremcard: 90GM9-III

Hazchem EAC: 2Y

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

INLAND WATERWAYS (ADNR/ADN)

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

Hazard Class: 9

Hazard ID Number: 99

UN or ID Number: 3257

Packing Group: III

Label(s) / Mark(s): 9 (ET)

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

SEA (IMDG)

Proper Shipping Name: ELEVATED TEMPERATURE LIQUID, N.O.S. (BITUMEN)
Hazard Class & Division: 9
UN Number: 3257
Packing Group: III
Label(s): 9 (ET)
EMS Number: F-A,S-P
Transport Document Name: UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S. (Bitumen), 9, PG III,

AIR (IATA)

Proper Shipping Name: NOT STANDARD PRACTICE)
Hazard Class & Division:
UN Number:
Packing Group: (N/A)
Label(s) / Mark(s):
Transport Document Name: NOT STANDARD PRACTICE,

[Footnote: Product classified as UN 3257 is forbidden by air transport but the product may be transported by air if its temperature is less than 100 deg. C (212 deg. F). If the product is offered for transport at less than 100 deg. C (212 deg. F), the transport classification is Not Regulated.]

SECTION 15	REGULATORY INFORMATION
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Material is not dangerous as defined by the EU Dangerous Substances/Preparations Directives.

EU LABELING: Not regulated according to EC Directives

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: AICS, IECSC, DSL, EINECS, ENCS, KECI, PICCS, TSCA

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 06: Notification Procedures - Header was modified.
Section 08: Hand Protection was modified.
Section 08: Environmental Control - Note was modified.
Section 01: Product Description was modified.
Section 05: Hazardous Combustion Products was modified.
Section 08: Hand Protection was modified.
Section 14: Transport Document Name was modified.



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Section 14: Inland Waterways (ADNR) - Header was modified.
Section 14: Transport Document Name was modified.
Section 14: Sea (IMDG) - Header was modified.
Section 14: Label(s) - Header was modified.
Section 08: Environmental Control - Note was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 16: Code to MHCs was modified.
Section 11: Chronic Tox - Component was modified.
Section 11: Chronic Tox - Product was modified.
Section 08: Exposure Limits Table was modified.
Section 11: Oral Lethality Test Data was modified.
Section 11: Dermal Lethality Test Data was modified.

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PPEC: C

DGN: 2029920XGB (1013211)
