
Data Sheet No. B30004 Revision : 31 01 2005

REPLACES B30004 : 16 10 2003

This data sheet has been prepared in accordance with the requirements of the Data Sheet Directive 91/155/EEC.

RECOMMENDED USES

Shell Tixophalte Wet is recommended for use as :

a bituminous adhesive and sealant

If Shell Tixophalte Wet is used for a purpose not covered in this section, Shell UK Ltd. would be grateful to receive information on the application.

KNOWN MISUSES/ABUSES

Shell Tixophalte Wet is not to be used as :

none known.

The disposal of Shell Tixophalte Wet to soil, watercourses and drains is a legal offence.

1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

| | |
|-------------------------------------|--|
| PRODUCT : | SHELL TIXOPHALTE WET |
| COMPANY : | SHELL UK OIL PRODUCTS LIMITED |
| TECHNICAL CONTACT: | PRODUCT HSE DEPARTMENT |
| ADDRESS : | STANLOW MANUFACTURING COMPLEX, PO BOX 3, ELLESMERE PORT, CH65 4HB |
| TELEPHONE : | 0151-350-4000 |
| EMERGENCY TELEPHONE NUMBER : | 0151-350-4595 |

2: COMPOSITION/INFORMATION ON INGREDIENTS

Shell Tixophalte Wet is a preparation manufactured from bitumen components manufactured from crude petroleum oil and additives.

The following components, which have health effects, are present at significant concentrations.

| CONC. | COMPONENT | EINECS | CLASS RISK PHRASES |
|-------|-----------------|--------|--------------------|
| =<15% | Aliphatic ester | | R10 Flammable |

Exposure limit values exist for the following constituents:

Asphalt, Petroleum Fumes
Hydrogen Sulphide

3: HAZARD IDENTIFICATION

Shell Tixophalte Wet is classified for supply and conveyance.

Shell Tixophalte Wet contains very low concentrations of Polycyclic Aromatic Compounds (PACs).

If Shell Tixophalte Wet is mixed with a diluent such that the resultant preparation has a low viscosity at ambient temperature, PACs from the bitumen may become bioavailable.

The carcinogenicity of the ensuing mixture is strongly dependent upon the nature of the diluent used as the PAC content of bitumen is low.

In undiluted bitumens, PACs are not considered to be bioavailable.

Exposure limits exist for Asphalt, Petroleum Fumes (bitumen), and for Hydrogen Sulphide which can be evolved by the decomposition of the sulphur compounds in the bitumen when in contact with very hot surfaces.

Exposure to high vapour concentrations can lead to nausea, headache and dizziness.

Excessive and prolonged exposure to mists may cause a chronic inflammatory reaction of the lungs and a form of pulmonary fibrosis.

Shell Tixophalte Wet is resistant to degradation and is, hence, persistent.

4: FIRST AID MEASURES

INHALATION

Remove the affected person to fresh air. If breathing has stopped administer artificial respiration. Give cardiac massage if necessary. If the person is breathing, but unconscious, place in the recovery position. Obtain medical assistance immediately.

SKIN - HOT BITUMEN

Flush the contaminated skin with cold water. DO NOT ATTEMPT TO REMOVE THE BITUMEN. Cover burns with sterile dressings. Do not apply any medication to the affected parts. Obtain medical attention immediately and show the physician this data sheet drawing attention to 'Notes for Doctors' in Section 11 below.

SKIN - COLD BITUMEN

Skin contact does not normally require first aid, but soaked clothing should be removed, and contaminated skin washed with soap and water. If persistent irritation occurs, medical advice should be sought without delay.

EYES

See, and treat as for, 'SKIN' above.

INGESTION

Ensure that the airway is not obstructed. Otherwise treat as for 'SKIN' above.

5: FIRE-FIGHTING MEASURES

| | | |
|----------------|----------------|--------------------------------------|
| Extinguishants | - Large Fire : | Foam/Water Fog - NEVER USE WATER JET |
| | - Small Fire : | Dry Powder/CO2/Sand/Earth |

WATER BASED FIRE EXTINGUISHANTS - WARNING

When water based extinguishants are applied to hot bitumen, the high temperature of the bitumen will cause the water to turn rapidly to steam. This can cause the hot bitumen to spatter, with consequent risks for the person operating the fire extinguisher. Consequently the use of water, foam or AFFF is not recommended except by competent fire fighters.

CUTBACK BITUMENS IN SPRAY FORM - WARNING

Cutback bitumens are frequently applied in the form of a spray, which can produce a flammable atmosphere. Special care must be exercised to avoid sources of ignition in the vicinity of the spraying operation.

6: ACCIDENTAL RELEASE MEASURES

The first concern, where applicable, should be to prevent entry to drains, watercourses, waterways, etc.

LAND SPILLAGES

Spills should be banded by a suitable medium such as sand or earth. The liquid should be allowed to cool to a solid state. The solidified bitumen should be shovelled into suitably marked containers and disposed of in accordance with local byelaws and the requirements of the Environmental Protection Act 1990.

MARITIME SPILLAGES

Any spillage of Shell Tixophalte Wet which results in overside pollution must be treated in accordance with the guidelines laid down in the respective Vessel Oil Spill Response Contingency Plan, as required by MARPOL 73/78 Annex 1, Regulation 26. Where the vessel is not required to comply with such legislation, the Owner's and/or Charterer's instructions must be followed. In the absence of any other guidelines, any spillage in territorial/coastal waters must be immediately reported to the appropriate maritime authority, e.g. coast guard, the vessel's local agent if applicable, and the vessel's Owner/Charterer. In international waters, any spillage should be reported to the nearest coastal state, and additional guidance should be sought immediately from the vessel's Owner/Charterer.

7: HANDLING AND STORAGE

HANDLING

Exposure to Shell Tixophalte Wet should be reduced as low as reasonably practicable. Reference should be made to the Health and Safety Executive's publication "COSHH Essentials".

Shell Tixophalte Wet does not require any special handling techniques, but it should be handled in suitable containers and spillage avoided.

STORAGE

It should be stored in properly designed, closable, labelled containers, eg mild steel or high density polyethylene (HDPE). Packed product should be earthed.

Further guidance may be obtained from the local environment agency office.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

The following limits are taken from The Health and Safety Executive's Guidance Note EH40 Occupational Exposure Limits 2002.

UK Occupational Exposure Standards :

| | |
|---------------------------|--|
| Asphalt, petroleum fumes: | 5 mg/cubic metre 8 hour TWA value. 10 mg/cubic metre 15-min. TWA value. |
|---------------------------|--|

Hydrogen sulphide may be evolved in tank head spaces.

| | |
|---------------------|---|
| Hydrogen Sulphide : | 7 mg/cubic metre 8 hour TWA value. 14 mg/cubic metre 15-min TWA value. |
|---------------------|---|

RECOMMENDED PROTECTIVE CLOTHING

Impervious gloves and overalls where regular contact is likely, and full face visors if there is a risk of splashing. Respiratory protective equipment to BS EN 137 1993 - Specification for Respiratory Protective Devices Self-contained Open Circuit Compressed Air Breathing Apparatus - should be used where exposures are likely to exceed the exposure limits.

9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|--------------------------------------|
| Physical State : | Very viscous at ambient temperatures |
| Appearance : | Opaque Black/Brown |
| Odour : | Characteristic |
| Acidity/Alkalinity : | Neutral/Mildly Acidic |
| Initial Boiling Point : | >160 Deg. C. |
| Flashpoint (COC) : | > 66 Deg. C. |
| Flammability : | Not applicable |
| Autoflammability : | >200 Deg. C. |
| Flammability Limits | |
| - Upper : | 6% |
| - Lower : | 1% |
| Explosive Properties : | Not applicable |
| Oxidising Properties : | Not applicable |
| Vapour Pressure @ 20 Deg. C. : | <0.1 k.Pa |
| Relative Density @ 15 Deg. C. : | 1.30 |
| Solubility : | Very Low |
| Water Solubility : | 99.5% Trichloroethylene |
| Fat solubility/solvent : | 3 to > 6 for constituents |
| Partition Coefficient, n-octanol water : | > 5 |
| Vapour Density (Air =1) : | |

10: STABILITY AND REACTIVITY

CONDITIONS TO AVOID

Extremes of temperature. Store at temperatures recommended by the Institute of Petroleum's Bitumen Safety Code.

MATERIALS TO AVOID

Strong oxidising agents, eg. chlorates which may be used in agriculture. Sources of ignition.

DECOMPOSITION PRODUCTS

The substances arising from the thermal decomposition of these products will largely depend upon the conditions bringing about decomposition. The following substances may be expected from normal combustion :

| | |
|--------------------|--|
| Carbon Dioxide | Polycyclic Aromatic Hydrocarbons |
| Carbon Monoxide | Unburnt Hydrocarbons |
| Water | Unidentified Organic and Inorganic Compounds |
| Particulate Matter | Nitrogen Oxides |
| Hydrogen sulphide | |

11: TOXICOLOGICAL INFORMATION

ACUTE HEALTH HAZARDS AND ADVICE

Shell Tixophalte Wet at ambient temperature presents no acute health hazards. However, If Shell Tixophalte Wet is handled at elevated temperatures this may cause burns if the product comes into contact with skin.

In the heated state bitumen give off fumes which it is undesirable to inhale. Additionally, very small quantities of HYDROGEN SULPHIDE can be present in Shell Tixophalte Wet , and the Hydrogen Sulphide is preferentially liberated into the vapour phase above the product where it can reach potentially hazardous concentrations. For this reason, tank vapour spaces should be regarded as HAZARDOUS.

INHALATION

At ambient temperatures the inhalation of vapours is not feasible or likely to present an acute hazard.

When bitumen is heated fumes, to which exposure limits apply, are liberated. Confined spaces and at elevated temperatures may lead to higher concentrations of vapour. Prolonged exposure in such circumstances can lead to narcotic effects leading to unconsciousness. Spray applications will also result in higher exposures and possible irritation of the upper respiratory tract.

Hydrogen sulphide can be present at trace levels in the liquid phase below 1ppm or can be formed in contact with overheated surfaces. For this reason tank head spaces should be treated as hazardous areas.

Precautions :

Inhalation of vapours should be avoided. Where, exceptionally, higher concentrations of the vapour may be encountered, e.g. in the event of a spillage in a badly ventilated area, persons should not be allowed to enter the area, even in an emergency, until the atmosphere has been checked and passed as safe for entry by a competent person.

First Aid :

Remove the affected person to fresh air. If breathing has stopped administer artificial respiration. Give cardiac massage if necessary. If the person is breathing, but unconscious, place in the recovery position. Obtain medical assistance immediately.

SKIN

Shell Tixophalte Wet presents no acute health hazards to the skin other than burning when handled at elevated temperatures.

Precautions :

Avoid contact with the skin by the use of suitable protective clothing.

First Aid : Hot Bitumen

Flush the contaminated skin with cold water. DO NOT ATTEMPT TO REMOVE THE BITUMEN. Cover burns with sterile dressings. Do not apply any medication to the affected parts. Obtain medical attention immediately and show the physician this data sheet drawing attention to 'Notes for Doctors' below. Skin contact does not normally require first aid, but soaked clothing should be removed, and contaminated skin washed with soap and water. If persistent irritation occurs, medical advice should be sought without delay.

First Aid: Cold Bitumen

Skin contact does not normally require first aid, but soaked clothing should be removed, and contaminated skin washed with soap and water. If persistent irritation occurs, medical advice should be sought without delay.

EYES

See, and treat as for, 'SKIN' above.

INGESTION

The ingestion of Shell Tixophalte Wet is not considered likely and their toxicity is of a very low order.

Precautions :

Avoid contact with the mouth and use suitable protective clothing.

First Aid :

Ensure that the airway is not obstructed. Otherwise treat as for 'SKIN' above.

CHRONIC HEALTH HAZARD AND ADVICE

The bituminous component of Shell Tixophalte Wet contains Polycyclic Aromatic Hydrocarbons at very low concentrations.

Despite the known presence of PCAs there is no known evidence at the time of publication which indicates that long term exposure to bitumen fume is harmful. It is recommended, however, that all unnecessary exposure be reduced as far as is reasonably practicable.

If Shell Tixophalte Wet is further diluted before use, the classification of the resultant preparation will be (strongly) dependent on the nature of the diluent used for the preparation.

NOTES FOR DOCTORS

BITUMEN BURNS

Hot bitumen will cause burns on contact. There is no need to remove bitumen from the skin ; this will provide a sterile covering that will detach itself in a few days. Initial treatment should be confined to rapid cooling under cold running water, and where there is a circumferential burn around a limb or digit, with adhesion of the bitumen, the adhering bitumen should be split to avoid a tourniquet effect.

12: ECOLOGICAL INFORMATION

The information given below refers to the hydrocarbon components .

AIR

Shell Tixophalte Wet is a mixture of volatile and non-volatile components. The volatile components will evaporate to air rapidly reacting with hydroxyl radicals and ozone.

WATER

Shell Tixophalte Wet will sink. The lighter components will either evaporate to air or will dissolve. Dissolved components will be either absorbed in sediments or evaporate to air. In aerobic water and sediments they will biodegrade, but in anaerobic conditions they will persist. The heavier components will persist in the environment for a considerable period of time.

SOIL

Shell Tixophalte Wet will form a solid layer on the surface. A small proportion will partition to air.

13: DISPOSAL CONSIDERATIONS

Shell Tixophalte Wet should be disposed of to a licensed waste contractor.

Any disposal route must satisfy the requirements of the of the Environmental Protection Act, 1990, the Environment Act 1995, the Special Waste Regulations and should comply with the any local byelaws.

Envirowise offers free advice through a national helpline. Initial contact by industry and commerce should be made to the Environment and Energy helpline (0800 585 794). The Envirowise programme is sponsored by Government and seeks to encourage good practice in environmental protection technology and techniques.

Further guidance can also be obtained from the local environment agency office.

14: TRANSPORT INFORMATION

Not Dangerous for Conveyance

15: REGULATORY INFORMATION

Not Dangerous for Supply

Additional Information

Safety data sheet available on request

LEGISLATION

Consumer Protection Act 1987
Control of Pollution Act 1974
Environmental Protection Act 1990
Environment Act 1995

Factories Act 1961
Health and Safety at Work Act 1974

Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labelling) Regulations
Chemical (Hazards, Information, and Packaging for Supply) Regulations
Control of Substances Hazardous to Health Regulations
Dangerous Substances in Harbour Areas Regulations
Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations
Road Traffic (Carriage of Dangerous Substances in Packages etc.) Regulations
Road Traffic (Carriage of Dangerous Substances in Road Tankers and Tank Containers) Regulations
Road Traffic (Training of Drivers of Vehicles Carrying Dangerous Goods) Regulations
Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
Special Waste Regulations 1996
Health and Safety (First Aid) Regulations 1981
Personal Protective Equipment (EC Directive) Regulations 1992
Personal Protective Equipment at Work Regulations 1992

16: OTHER INFORMATION

GUIDANCE NOTES

UK Chemicals Regulatory Atlas, An Overview of how to guide your chemical through to regulatory compliance (DTI).

HSG71 The storage of packaged dangerous substances
EH/40 Occupational Exposure Limits
MS24 Health surveillance of occupational skin disease
HSG 53 The selection, use and maintenance of respiratory protective equipment: A practical guide
HSG 206 Cost and effectiveness of chemical protective gloves for the workplace: Guidance for employers and health and safety specialists.
L74 First Aid at work: Approved Code of Practice and Guidance
HSG 136 Workplace transport safety : guidance for employers
INDG234 (rev) Are you Involved in the Carriage of Dangerous Goods by Road or Rail

OTHER LITERATURE

BS 434 Bitumen Road Emulsions
BS 2000 Methods of Test for Petroleum and its Products
BS 3690 Bitumens for Building and Civil Engineering
BS 5345 Selection, Installation and Maintenance of Electrical Apparatus for Use in Potentially Explosive Atmospheres
Concawe Report 7/82 Health Aspects of Bitumens
Clinicians on Petroleum Products
Concawe Report 6/84 Review of Bitumen Fume Exposures and Guidance on Measurement
Concawe Report 01/97 Petroleum Products - First Aid Emergency and Medical Advice
Department of the Environment - Waste Management - The Duty of Care - A Code of Practice
European Model Code of Safe Practice in the Storage and Handling of Petroleum Products
Institute of Petroleum Bitumen Safety Code

Development of a carcinogenic potency index for dermal exposure to viscous oil products (accepted 16th Feb 1999) - Brandt, Booth, de Groot & Watson -Arch Toxicol (1999) 73: 180-188

Studies on the dermal and systemic bioavailability of polycyclic aromatic compounds in high viscosity oil products - Potter, Booth, Brandt, Loose, Priston, Wright & Watson (accepted 16th Feb 1999) - Arch Toxicol (1999) 73: 129 -140.

Miscellaneous

It is the policy of Shell UK Oil Products Limited to provide safety data sheets for all marketed products irrespective of whether the product is classified as dangerous for supply or not.