Material Safety Data Sheet

1 . Identification of the material and supplier

Product name	**OLEXOBIT A35P**
SDS no.	0000003021
Product use	Bitumen product for road building, industrial and civil engineering materials and processes. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Supplier	BP Australia Pty Ltd (ABN 53 004 085 616) 717 Bourke Street Docklands VIC 3008 Australia Tel: +61 (03) 9268 4111 Fax: +61 (03) 9268 3321
EMERGENCY TELEPHONE NUMBER	1800 638 556
OTHER PRODUCT INFORMATION	BP Bitumen Technical Helpline: 1 800 24 88 66
Product code	0000003021

2 . Hazards identification

Statement of hazardous/dangerous nature	NON-HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3 . Composition/information on ingredients

Complex hydrocarbon substance. Proprietary performance additives. Polymer.

Ingredient name	CAS no.	%
Bitumen	8052-42-4	>90
or		
Bitumen , oxidized	64742-93-4	>90
Polymer	Proprietary	<10
Hydrogen Sulphide	7783-06-4	Trace

4 . First-aid measures

Eye contact

Cold product - Wash eye thoroughly with copious quantities of water, ensuring eyelids are held open. Obtain medical advice if any pain or redness develops or persists.
Hot product - Flood with water to dissipate heat. In the event of any product remaining, do not try to remove it other than by continued irrigation with water. Obtain medical attention immediately.

Skin contact

Cold Product - Wash contaminated skin with soap and water. Remove contaminated clothing and wash underlying skin as soon as reasonably practicable.
Hot Product - Flood skin with cold water to dissipate heat, cover with clean cotton or gauze, obtain medical advice immediately.

Inhalation

If inhaled, remove to fresh air. Get medical attention if symptoms appear.

EXPOSURE TO HYDROGEN SULPHIDE:
Casualties suffering ill effects as a result of exposure to hydrogen sulphide should be immediately removed to fresh air and medical assistance obtained without delay. Unconscious casualties must be placed in the recovery position. Monitor breathing and pulse rate and if breathing has failed, or is deemed inadequate, respiration must be assisted, preferably by the mouth to mouth method. Administer external cardiac massage if necessary. Seek medical attention immediately.

Ingestion

Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Advice to doctor

Treatment should in general be symptomatic and directed to relieving any effects.

Inhalation of hydrogen sulphide may cause central respiratory depression leading to coma and death. It is irritant to the respiratory tract causing chemical pneumonitis and pulmonary oedema. The onset of pulmonary oedema may be delayed for 24 to 48 hours. Treat with oxygen and ventilate as appropriate. Administer broncho-dilators if indicated and consider administration of corticosteroids. Keep casualty under surveillance for 48 hours in case pulmonary oedema develops.

Where skin burns occur the area should be immediately immersed in cold water until the product is thoroughly cooled.
Do not attempt to remove the product from the skin as it provides an air-tight sterile covering over the

burn which will eventually fall away with the scab as the burn heals.
If for any reason the product must be removed, this can be done using a slightly warmed medicinal liquid paraffin.
Kerosine and other solvents should never be used.
All burns should receive medical attention.
It should be noted that the product contracts on cooling and where a limb is encased care should be taken to avoid the development of a tourniquet effect.

5 . Fire-fighting measures

Extinguishing media

Suitable In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

Not suitable Do not use water jet.

Avoid spraying directly into storage containers because of the danger of boil-over. Boil-over is the rapid increase in volume caused by the presence of water in hot product and the subsequent overflow from a tank.

Hazardous decomposition products Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
Hydrogen Sulphide (H2S)
Acetic acid.
Vinyl acetate

Unusual fire/explosion hazards No specific fire or explosion hazard.

Special fire-fighting procedures No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Protection of fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazchem code 2Y

6 . Accidental release measures

Personal precautions Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing vapour or mist. Ensure good ventilation. Follow all fire-fighting procedures (section 5). Do not touch or walk through spilt material. Put on appropriate personal protective equipment (see Section 8). When handling hot material, wear heat resistant protective gloves, clothing and face shield that are able to withstand the temperature of the heated product.

This material can contain hydrogen sulphide (H_2S) which very toxic. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained positive pressure breathing apparatus (SCBA).

Environmental precautions Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Depending upon its temperature the product may be liquid, semi-solid or solid. Protect drains from spills and prevent entry of product, since this may result in blockage on cooling. Should blockage occur, notify the appropriate authority immediately.

Small spill Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling Contact with hot product may cause burns. Avoid contact with eyes. If splashing is likely to occur wear a full face visor or chemical goggles as appropriate. Avoid contact with skin and clothing. Wash thoroughly after handling. Do not spray onto wet road surfaces or when rain is forecast as any resultant run-off could contaminate ditches and drains.

Storage Clean, dry and heat resistant hoses should be used. Do not use steam to empty hoses. Do not use steam or compressed air to empty pipelines. Do not use solvents to clear obstructions from pipelines. Gentle heat can be used to clear obstructions.

Australian Industry standards recommend a maximum temperature for storage of 200C. Under no circumstances should water be allowed to contact hot product because of the danger of boil-over. Particular care should be taken to ensure that bulk storage tanks are watertight and that any steam heating coils are regularly checked for leaks. For bulk product, the storage temperature should not fluctuate above and below 100°C as this increases the risk of water condensation leading to boil-over. Care must always be exercised when heating product through 100°C.

This product can be delivered, stored and used at temperatures above 100°C.
For quality, technical, and health, safety and environmental reasons, bitumen should not be overheated during handling and storage. Our company representative will provide advice on storage

and application temperatures, which are grade specific. Operating temperatures should be kept as low as possible to minimise fume generation. We recommend however that, as a general rule, bitumen temperature should be kept in the range 130°C to 200°C and never exceed the industry recommended maximum safe working temperature of 230°C. At temperatures above 230°C, significant decomposition can occur, with an increased risk of generating flammable/hazardous atmospheres. If exposure to bitumen fume generated at temperatures above 200°C cannot be precluded, skin and inhalation exposure should be avoided by ensuring adequate workplace ventilation and if necessary the use of appropriate personal protective equipment.

When product is stored for a long period of time, deposits may form on the walls and roofs of storage tanks. These deposits (carbonaceous materials, iron sulphide) may be pyrophoric and auto-ignite when they come into contact with oxygen in the air, for example, when product is removed from the tank. The control of oxygen concentration in the vapour space of the tank will help to prevent the formation of pyrophoric deposits.

Tanks containing product can be heated by heater tubes. Care should be taken when product is being pumped from a tank to avoid the risk of fire or explosion caused by exposing hot heater tubes. Unless the heat has been switched off for a period of time to allow sufficient cooling to occur, precautions should be taken to prevent the level of product above the heater tubes dropping below 150 mm.

This material can contain hydrogen sulphide (H_2S), a very toxic and extremely flammable gas. Vapours containing hydrogen sulphide may accumulate during storage or transport and may also be vented during filling of tanks. Hydrogen sulphide has a typical "bad egg" smell but at high concentrations the sense of smell is rapidly lost, therefore do not rely on sense of smell for detecting hydrogen sulphide. Use specially designed measuring instruments for determining its concentration.

Combustibility Classification Combustible liquid Class C2 (AS 1940).

Additional information-Storage This product must be handled in compliance with Australian Standard and local regulations: The storage and handling of flammable and combustible liquids [Standard 1940-2004 as amended and adapted].

8 . Exposure controls/personal protection

Ingredient name	Occupational exposure limits
Bitumen	**Safe Work Australia (Australia).** TWA: 5 mg/m³ 8 hour(s). Issued/Revised: 5/1995 Form: Fume
Hydrogen Sulphide	**Safe Work Australia (Australia).** STEL: 21 mg/m³ 15 minute(s). Issued/Revised: 5/1995 STEL: 15 ppm 15 minute(s). Issued/Revised: 5/1995 TWA: 14 mg/m³ 8 hour(s). Issued/Revised: 5/1995 TWA: 10 ppm 8 hour(s). Issued/Revised: 5/1995
Other Applicable Exposure limit values:	
Acetaldehyde	**Safe Work Australia (Australia).** STEL: 91 mg/m³ 15 minute(s). Issued/Revised: 11/2001 STEL: 50 ppm 15 minute(s). Issued/Revised: 11/2001 TWA: 36 mg/m³ 8 hour(s). Issued/Revised: 11/2001 TWA: 20 ppm 8 hour(s). Issued/Revised: 11/2001
Acetic acid	**Safe Work Australia (Australia).** STEL: 37 mg/m³ 15 minute(s). Issued/Revised: 5/1995 STEL: 15 ppm 15 minute(s). Issued/Revised: 5/1995 TWA: 25 mg/m³ 8 hour(s). Issued/Revised: 5/1995 TWA: 10 ppm 8 hour(s). Issued/Revised: 5/1995
Vinyl acetate	**Safe Work Australia (Australia).** STEL: 70 mg/m³ 15 minute(s). Issued/Revised: 5/1995 STEL: 20 ppm 15 minute(s). Issued/Revised: 5/1995 TWA: 35 mg/m³ 8 hour(s). Issued/Revised: 5/1995 TWA: 10 ppm 8 hour(s). Issued/Revised: 5/1995

Whilst specific OELs for certain components are included in this SDS, it should be noted that other components of the preparation will be present in any mist, vapour or dust produced. For this reason, the specific OELs may not be applicable to the product and are provided for guidance purposes.

Biological Limit Values No biological limit allocated.

Exposure controls

Occupational exposure controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection	Use only with adequate ventilation. Do not breathe vapour or mist. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid breathing of vapours, mists or spray. Select and use respirators in accordance with AS/NZS 1715/1716. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure level. Approved air-supplied breathing apparatus must be worn where there is a risk of inhaling hydrogen sulphide gas. Personal gas monitors may also provide early warning of hydrogen sulphide. Air-filtering respirators, also called air-purifying respirators, will not be adequate under conditions of oxygen deficiency (i.e. low oxygen concentration), and would not be considered suitable where airborne concentrations of chemicals with a significant hazard are present. In these cases air-supplied breathing apparatus will be required.
Skin and body	Avoid contact with skin and clothing. Wear suitable protective clothing. Wear impervious overalls covering full body and limbs, with legs worn over protective boots. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Thermal resistant clothing will be required when handling hot products.
Hand protection	Cold material: Wear chemical resistant gloves. Recommended: nitrile gloves. Hot material: to prevent thermal burns wear heat resistant and impervious gauntlets/gloves.
Eye protection	Cold material: wear safety glasses with side shields. Hot material: to prevent thermal burns wear a helmet, full face visor and heat resistant neck flap / apron. Chemical splash goggles.

9 . Physical and chemical properties

Physical state	Solid.
Colour	Black.
Odour	Hydrocarbon. [Strong]
Flash point	>250 °C (Closed cup)
Explosive properties	This material is not explosive as defined by established regulatory criteria.
Vapour pressure	<0.1 kPa (<0.75 mm Hg) at 20°C
Vapour density	Not available.
Viscosity	Dynamic: 0.2 Pa·s (200 cP) at 165°C
pH	Not applicable.
Boiling point / range	Not available.
Melting point / range	Softening Point: 70°C (158°F)
Relative density/Specific gravity	Not available.
Density	1030 kg/m^3 (1.03 g/cm^3) at 15°C
Solubility	Insoluble

10 . Stability and reactivity

Stability	The product is stable.
Conditions to avoid	Avoid extreme temperatures, strong oxidizers, fire.
Incompatibility with various substances/Hazardous Reactions	Reactive or incompatible with the following materials: oxidising materials.
Hazardous decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides Hydrogen Sulphide (H2S) Acetic acid. Vinyl acetate

11 . Toxicological information

Eyes	Will cause burns if hot material contacts eyes. Vapour, mist or fume may cause eye irritation.
Skin	Will cause burns if hot material contacts skin.
Inhalation	May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.
Ingestion	Ingestion of hot product is unlikely but will cause severe burns.
Acute toxicity	Contact with hot product may cause burns. May cause irritation to eyes, nose and throat due to exposure to vapour, mists or fumes.
Chronic toxicity	

Carcinogenic effects

No component of this product at levels greater than or equal to 0.1% is identified as a carcinogen by ACGIH, the International Agency for Research on Cancer (IARC), the European Commission (EC), or the National Occupational Health and Safety Commission (Australia).

Mutagenic effects

No known significant effects or critical hazards.

Other information

When product is heated to high temperatures, vapour, mists or fumes will be given off and may condense, contaminating the skin or clothing of operatives. Prolonged or repeated contact with this condensate may give rise to dermatitis.

Vapour, mists or fumes may contain polycyclic aromatic hydrocarbons some of which are known to produce skin cancer.

Hydrogen sulphide (H2S) gas may accumulate in storage tanks of bulk transport compartments containing this material. Contact with eyes causes painful conjunctivitis, sensitivity to light, tearing and clouding of vision. Inhalation of low concentrations causes a runny nose with a loss of sense of smell, labored breathing and shortness of breath. Direct contact with skin causes pain and redness. Other symptoms of exposure include profuse salivation, nausea, vomiting, diarrhea, giddiness, headache, dizziness, confusion, rapid breathing, rapid heart rate, sweating, weakness, sudden collapse, unconsciousness and death due to respiratory paralysis.Cardiac neurological effects have also been reported. Prolonged breathing (greater than one hour) of concentrations of H2S around 50 ppm can produce eye and respiratory tract irritation. Levels of 250 to 600 ppm will result in fluid in the lungs, and concentrations around 1,000 ppm will cause unconsciousness and death in a short period of time. Since the sense of smell rapidly becomes insensitive to this toxic, colourless gas, odour cannot be relied upon as an indicator of concentrations of the gas. Always exercise caution when working around closed containers.

Asphalt fume condensate generated under laboratory conditions has produced positive results in the Ames mutagenicity test. However, asphalt fume condensate collected in the field under actual field conditions has tested negative.

Laboratory-generated asphalt fume condensate has been shown to produce skin tumors in mice when applied to their skin repeatedly for prolonged periods of time over the entire course of their lifetime. The fume condensate used in these studies was generated using unrealistically high temperatures and vacuum conditions.

A similar study in mice using fume condensate generated from paving grade asphalt under actual workplace conditions produced no skin tumors.

Further studies have shown that the chemical composition and physical properties of laboratory-generated fume differ markedly from the composition and properties of fume generated in the field under actual workplace conditions. These differences indicate that the health hazards attributed to laboratory-generated fume are not representative of actual workplace hazards.

There is no evidence that neat asphalt is carcinogenic. Therefore, intermittent or occasional skin contact with petroleum asphalt is not expected to have serious health effects as long as good personal hygiene measures, such as those outlined in this material safety data sheet, are followed.

No carcinogenic effects have been observed in laboratory animals during lifetime inhalation studies with asphalt aerosol or fume. Chronic inflammatory changes to the respiratory tract have been observed in exposed animals. These changes include bronchitis, pneumonitis, and pulmonary congestion, which are similar to the inflammatory effects seen following chronic inhalation exposure to other types of non-specific respiratory irritants.

Health monitoring studies of lung cancer among asphalt workers have yielded contradictory results. While some studies are negative, others are positive but confounded by worker co-exposure to other potential lung carcinogens such as cigarette smoke and coal tar.

The International Agency for Research on Cancer (IARC) has conducted its own large health monitoring study on workers. No evidence of an association between workplace exposure to asphalt fume and lung cancer was found.

The IARC has concluded that there is inadequate evidence to classify asphalt as carcinogenic to humans.

12 . Ecological information

Ecotoxicity

Not classified as environmentally hazardous in accordance with the 'Approved Criteria for Classifying Hazardous Substances' [NOHSC (1008)/2004 as amended and adapted].

Biodegradability

Persistence/degradability

Not readily biodegradable.

Mobility

Spillages are unlikely to penetrate the soil.

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Other ecological information

If released to water the product will sink.

13 . Disposal considerations

Disposal considerations / Waste information

The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Special Precautions for Landfill or Incineration

No additional special precautions identified.

14 . Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
ADG Classification	UN3257	Elevated temperature liquid, n.o.s. (Bitumen)	9	III		**Hazchem code** 2Y **Initial emergency response guide** 15 **Remarks** Hot material: When this material is shipped at temperatures < 100°C this material is not regulated for transport.
IMDG Classification	UN3257	Elevated temperature liquid, n.o.s.	9	III		**Remarks** Hot material: When this material is shipped at temperatures < 100°C this material is not regulated for transport.
IATA/ICAO Classification	UN3257	Elevated temperature liquid, n.o.s.	9	III		**Remarks** Hot material: Forbidden for transport on passenger and cargo aircraft in molten state. When this material is shipped at temperatures < 100°C this material is not regulated for transport.

PG* : Packing group

Special precautions for user

No known special precautions required. See Section: "Handling and storage" for additional information.

15 . Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not scheduled

Industrial Products - Labelling requirements for SUSMP do not apply to a poison that is packed and sold solely for industrial, laboratory or manufacturing use. However, this product is labelled in accordance with NOSHC National Code of Practice for labelling of workplace substances.

Control of Scheduled Carcinogenic Substances

Ingredient name **Schedule**

No Listed Substance

Other regulations

REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.
United States inventory (TSCA 8b)	All components are listed or exempted.
Australia inventory (AICS)	All components are listed or exempted.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	At least one component is not listed.
Japan inventory (ENCS)	All components are listed or exempted.

Korea inventory (KECI)	All components are listed or exempted.
Philippines inventory (PICCS)	All components are listed or exempted.

16 . Other information

Key to abbreviations

AMP = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists, an agency that promulgates exposure standards.
ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail
ADG Code = Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number = Chemical Abstracts Service Registry Number
HAZCHEM Code = Emergency action code of numbers and letters which gives information to emergency services. Its use is required by the ADG Code for Dangerous Goods in bulk.
ICAO = International Civil Aviation Organization.
IATA = International Air Transport Association, the organization promulgating rules governing shipment of goods by air.
IMDG = International Maritime Organization Rules, rules governing shipment of goods by water.
IP 346 = A chemical screening assay for dermal toxicity. The European Commission has recommended that Method IP 346 be used as the basis for labelling certain lubricant oil base stocks for carcinogenicity. The EU Commission has stipulated that the classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346. (See Note L, European Commission Directive 67/548/EEC as amended and adapted.) DMSO is a solvent.
NOHSC = National Occupational Health & Safety Commission, Australia
TWA = Time weighted average
STEL = Short term exposure limit
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

History

Date of issue	30/01/2012.
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Prepared by	Product Stewardship

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.