

Section 1 - Identification of Chemical Product and Company

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Substance: Blend of crude oils from various sources. These crude oils are a complex mixture of paraffinic, naphthenic and aromatic hydrocarbons ranging in carbon number from C₁ to C₆₀₊.

Trade Name: B-Heavy Oil

Product Code: 9018000600

Product Use: Crude oil standard for laboratory calibration purposes.

Creation Date: October, 2007

Revision Date: March 2015

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: T, Toxic. F+, Highly Flammable. Hazardous according to the criteria of ASCC.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R11, R48, R65, R66, R20/22. Highly flammable. Danger of serious damage to health by prolonged exposure. Harmful: May cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking. Harmful through inhalation, and if swallowed.

Safety Phrases: S36, S38, S46, S24/25. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If swallowed, contact a doctor or Poisons Information Centre immediately and show this MSDS or label. Avoid contact with skin and eyes.

SUSDP Classification: None allocated.

ADG Classification: Class 3 (PETROLEUM CRUDE OIL)

UN Number: 1267

Emergency Overview

Physical Description & Colour: Brown-black liquid. Presented in a 10mL bottle.

Odour: Characteristic sulfurous odour.

Major Health Hazards: may cause serious damage to health by prolonged exposure, harmful by inhalation and if swallowed, if aspirated, may cause lung damage, repeated exposure may cause skin dryness or cracking.

Potential Health Effects

Inhalation:

Short Term Exposure: Available data shows that this product is harmful, but symptoms are not available. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be irritating, but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: Significant oral exposure is considered to be unlikely. Because of the low viscosity of this product, it may directly enter the lungs if swallowed, or if subsequently vomited. Once in the lungs, it is very difficult to remove and can cause severe injury or death. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.

Long Term Exposure: No data for health effects associated with long term ingestion.

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Carcinogen Status:

May contain benzene, toluene and xylene in small concentrations (<0.1%).

ASCC: Benzene is classified by ASCC as a Class 1 Carcinogen, known to be carcinogenic to humans. See the ASCC website for further details. A web address has not been provided as addresses frequently change.

NTP: Benzene is classified by NTP as known to be carcinogenic to humans. See the NTP website for further details. A web address has not been provided as addresses frequently change.

IARC: Benzene is classed 1 by IARC - carcinogenic to humans. Crude oil is Class 3 - unclassifiable as to carcinogenicity to humans.

Toluene is Class 3 - unclassifiable as to carcinogenicity to humans.

Xylene is Class 3 - unclassifiable as to carcinogenicity to humans.

See the IARC website for further details. A web address has not been provided as addresses frequently change.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m ³)	STEL (mg/m ³)
Residues (petroleum), atm. tower	64741-45-3	pure *	not set	not set

† May contain hydrogen sulfide which is a toxic gas. It is unlikely to cause a significant hazard in 10mL quantities, but if an incident occurs involving for example a box of bottles, suitable precautions should be taken.

* Commercially pure.

This is a variable chemistry product whose ratio of components may vary. Minor quantities of other non hazardous ingredients are also possible.

The ASCC TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Skin Contact: Gently blot away excess liquid. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

Eye Contact: Quickly and gently blot material from eyes. No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: This product is classified as flammable. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions. Any explosion will likely spread the fire to surrounding materials. Water spray may be used to cool drums involved in a fire, reducing the chances of an explosion. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Preferred extinguishing media are carbon dioxide, dry chemical, foam, water fog. Foam is the preferred medium for large fires. Ensure that no spillage enters drains or water courses.

Fire Fighting: Immediately evacuate the area of unnecessary personnel.

Flash point: Variable from batch to batch. Treat as less than 23°C

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

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Autoignition temperature: No data.
Flammability Class: Flammable

Section 6 - Accidental Release Measures

Accidental release: This product is sold in small packages, and the accidental release from one of these is not usually a cause for concern. For minor spills, simply mop and clean up, putting waste into garbage or flush to sewer, while making sure that personal exposure via skin contact and inhalation is minimised. You should wear rubber or PVC gloves when handling this product in the commercial setting, and avoid contact as much as is reasonably possible. In the event of a major spill, prevent spillage from entering drains or water courses and call emergency services. Do not allow to contact with ingredients mentioned in Section 10 below.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Use in well ventilated areas and keep the top on the bottle as much as possible. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Store in a cool, well ventilated area, and make sure that surrounding electrical devices and switches are suitable. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination and possible evaporation. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 2500kg or L of Dangerous Goods of Packaging Group II, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

ASCC Exposure Limits	TWA (mg/m ³)	STEL (mg/m ³)
benzene	3.2	not set
toluene	191	574
xylene	350	655

The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the top is kept on the bottle as much as possible, the work environment remains well ventilated and that vapours and mists are minimised.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

Skin Protection: You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and goggles when handling this product. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Section 9 - Physical and Chemical Properties:

Physical Description & colour: Brown-black liquid.
Odour: Characteristic sulfurous odour.
Boiling Point: Not available.
Freezing/Melting Point: No specific data. Liquid at normal temperatures.
Volatiles: No data.
Vapour Pressure: No data.
Vapour Density: No data.
Specific Gravity: No data.
Water Solubility: Insoluble.
pH: No data.
Volatility: No data.

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Odour Threshold: No data.
Evaporation Rate: No data.
Coeff Oil/water Distribution: No data
Autoignition temp: No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Containers should be kept dry. Keep containers and surrounding areas well ventilated. Keep away from sources of sparks or ignition.

Incompatibilities: strong oxidising agents.

Fire Decomposition: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: Polymerisation reactions are unlikely; they are not expected to occur.

Section 11 - Toxicological Information

Local Effects:

Target Organs: There is no data to hand indicating any particular target organs.

Note that this product is sold in 10mL bottles which is usually insufficient to present any significant health risk in normal use.

This product may contain benzene at a level of >0.1%. Repeated or prolonged exposure to benzene at concentrations in excess of the TLV may cause serious injury to blood-forming organs. Significant chronic exposure to benzene vapour has been reported to produce various blood disorders ranging from anaemia to certain forms of leukaemia (cancer) in man.

Benzene produced tumours in rats and mice in lifetime chronic toxicity studies, but the response has not been consistent across species, strain, sex or route of exposure. Animal studies on benzene have demonstrated immune toxicity, chromosomal aberrations, testicular effects and alterations in reproductive cycles and embryo/fetotoxicity, but not teratogenicity.

This product may contain hexane at a level of >1.0%. Studies in laboratory animals have produced systemic toxicity in blood, spleen and lungs. Fetotoxicity has been observed at hexane concentrations that produced maternal toxicity. Long term exposure to high concentrations of hexane has been shown to cause testicular effects and nervous system damage.

This product may contain toluene at a level of >1.0%. Deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney and brain damage and central nervous system effects (incoordination, lassitude and memory loss) in individuals abusing toluene for its euphoric effects.

This product may contain xylene at a level of >1.0%. Gross overexposure or severe poisoning incidents in humans to xylenes has been reported to cause lung, liver, kidney, heart and brain damage as well as neurologic disturbances. Laboratory animals exposed to high doses of xylene showed evidence of effects in the liver, kidneys, lungs, spleen, heart and adrenals. Exposure of pregnant rats, mice and rabbits during gestation to significant concentrations of xylene produced maternal, foetal and developmental toxicity (skeletal retardation, cleft palate, and wavy ribs) generally at maternally toxic doses. These types of foetotoxic effects have been associated with maternal toxicity. Repeated inhalation of high xylene concentrations have shown impairment of performance abilities (behavioural tests) in animals and man.

Xylene produced a mid frequency hearing loss in rats subchronically exposed to high concentrations of xylene.

Classification of Hazardous Ingredients

Ingredient

Risk Phrases

No ingredient mentioned in the HSIS Database is present in this product at hazardous concentrations.

Section 12 - Ecological Information

Insufficient data to be sure of status.

Coating action of oil can kill birds, plankton, algae and fish. Keep out of all bodies of water and sewage drainage systems.

Two crude oils were tested in a acute battery of ecotoxicity tests. The 96 hour lethal loading (LL₅₀) values for rainbow trout were 21 and 41 mg/l. LL₅₀s for invertebrate organisms (mysid) were determined to be 2.7 and 4.1 mg/l and EL₅₀s for algae were 122 and 528 ml/kg.

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Section 13 - Disposal Considerations

Disposal: There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. If neither of these options is suitable, consider controlled incineration, or landfill.

Section 14 - Transport Information

ADG Code: 1267, PETROLEUM CRUDE OIL

Hazchem Code: 3WE

Special Provisions: SP185

Dangerous Goods Class: Class 3, Flammable liquids.

Packaging Group: II

Packaging Method: 3.8.3

Class 3 Flammable Liquids shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases where flammable liquids and flammable gases are both in bulk), 2.3 (Toxic Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances, except Flammable Liquid is nitromethane), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases except where the Flammable Liquids and Flammable Gases are in bulk), 2.2 (Non-Flammable Non-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances), 6 (Toxic Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

Section 15 - Regulatory Information

AICS: This product is compliant with NICNAS regulations.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS	Australian Inventory of Chemical Substances
ASCC	Office of the Australian Safety and Compensation Council
CAS Number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSDP	Standard for the Uniform Scheduling of Drugs & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the ASCC document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2011(2003)]
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