



Section 1: IDENTIFICATION

Product Name: Bunker C Fuel Oil Type 6
Synonyms: #6 FUEL OIL; BUNKER C; 0385.
Product Use: Industrial Burner Fuel.
Restrictions on Use: Not available.
Manufacturer/Supplier: Husky Oil Operations Ltd.
PO Box 6525 Station 'D'
Calgary, Alberta T2P 3G7
Phone Number: 403-298-6111
Emergency Phone: 403-262-2111
Date of Preparation of SDS: January 28, 2016

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Skin Irritation, Category 2
Eye Irritation, Category 2B
Carcinogenicity, Category 1B

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: Causes skin irritation.
Causes eye irritation.
May cause cancer.

Precautionary Statements

Prevention: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.

Response: If on skin: Wash with plenty of soap and water.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If exposed or concerned: Get medical advice/attention.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

Storage: Store locked up.



Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 100% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous Ingredient(s) | Common name / Synonyms | CAS No. | % wt./wt. |
|--|---------------------------|-------------|-----------|
| Distillates (petroleum), petroleum residues vacuum | Not available. | 68955-27-1 | 40 - 70 |
| Asphalt | Not available. | 8052-42-4 | 30 - 60 |
| Polycyclic Aromatic Hydrocarbons | Not available. | 130498-29-2 | variable |
| Hydrogen sulfide (H ₂ S) | Hydrogen sulphide | 7783-06-4 | Trace |

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product may contain small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Causes eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact.

Skin Contact: If on skin (or hair): Rinse skin with water/shower. Get immediate medical advice/attention. Remove non-adhering contaminated clothing. Cool adherent materials and burned areas with ice and/or cold water. Do not remove adherent material or clothing. Wash contaminated clothing before reuse.



Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Hot liquid product may cause serious thermal burns on direct contact. Asphalt fumes can increase susceptibility to sunburn.

Ingestion: If swallowed: Rinse mouth. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: Hot product may cause thermal burns. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen. If swallowed in large quantities, Asphalt can obstruct the intestine.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is sensitive to static discharge at temperatures at or above the flash point.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.
Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Do not spray water onto burning product as this may cause spattering and spreading of the flame.

Products of Combustion: Oxides of carbon. Oxides of sulphur.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.



Section 6: ACCIDENTAL RELEASE MEASURES

- Emergency Procedures:** Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Personal Precautions:** Do not touch or walk through spilled material. Use personal protection recommended in Section 8. Don full-face, positive pressure, self-contained breathing apparatus.
- Environmental Precautions:** Keep out of drains, sewers, ditches, and waterways.
- Methods for Containment:** Stop leak if without risk. Contain hot liquid by dyking and allow to cool and solidify. Do not flush to sewer or allow to enter waterways.
- Methods for Clean-Up:** Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Other Information:** See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

- Handling:**
Do not swallow. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Grounding of containers/pouring equipment is necessary when transferring hot liquid product. See Section 8 for information on Personal Protective Equipment.
- Storage:**
Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Asphalt contains trace amounts of Hydrogen sulfide which can accumulate in vapour space of tanks and containers. Structural materials and lighting and ventilation systems should be corrosion resistant.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

- Distillates (petroleum), petroleum residues vacuum [CAS No. 68955-27-1]
ACGIH: A2; Exposure by all routes should be carefully controlled to levels as low as possible (2009); For Mineral oil, excluding metal working fluids; Poorly and mildly refined
OSHA: 5 mg/m³ (TWA); For Oil mist, mineral.
- Asphalt [CAS No. 8052-42-4]
ACGIH: 0.5 mg/m³ (TWA); A4; BEI; Inhalable fraction; For Asphalt (Bitumen) fume, as benzene-soluble aerosol
OSHA: No PEL established.



Polycyclic Aromatic Hydrocarbons [CAS No. 130498-29-2]

ACGIH: A2; BEI; Exposure by all routes should be carefully controlled to levels as low as possible (1990); For Benz[a]anthracene

OSHA: 0.2 mg/m³ (TWA); For benzene-soluble fraction.

Hydrogen sulphide [CAS No. 7783-06-4]

ACGIH: 1 ppm (TWA); 5 ppm (STEL); (2009);

OSHA: 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other meas. exp. occurs.)

10 ppm (TWA); 15 ppm (STEL) [Vacated];

PEL: Permissible Exposure Limit

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

C: Ceiling

Engineering Controls:

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear chemical safety goggles. If product is hot, wear full face-shield. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. If product is hot, thermally protective gloves are recommended. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing. Clothing with full length sleeves and pants should be worn.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.



Section 9: PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|--|
| Appearance: | Black viscous material. |
| Colour: | Black. |
| Odour: | Petroleum. |
| Odour Threshold: | Not available. |
| Physical State: | Liquid. |
| pH: | Not available. |
| Melting Point / Freezing Point: | -9 °C (15.8 °F) |
| Initial Boiling Point: | Not available. |
| Boiling Range: | 310 °C (590 °F) |
| Flash Point: | > 120 °C (248 °F) (PMCC) |
| Evaporation Rate: | Not available. |
| Flammability (solid, gas): | Not applicable. |
| Lower Flammability Limit: | Not available. |
| Upper Flammability Limit: | Not available. |
| Vapor Pressure: | Not available. |
| Vapor Density: | Not available. |
| Relative Density: | 0.9726 (Water = 1) |
| Solubilities: | Insoluble in water. Soluble in diethyl ether, acetone. |
| Partition Coefficient: n-Octanol/Water: | Not available. |
| Auto-ignition Temperature: | Not available. |
| Decomposition Temperature: | Not available. |
| Viscosity: | Not available. |
| Percent Volatile, wt. %: | Not available. |
| VOC content, wt. %: | Not available. |
| Density: | Not available. |
| Coefficient of Water/Oil Distribution: | Not available. |

Section 10: STABILITY AND REACTIVITY

| | |
|----------------------------|---|
| Reactivity: | Contact with incompatible materials. Sources of ignition. Exposure to heat. |
| Chemical Stability: | Stable under normal storage conditions. |



Possibility of Hazardous Reactions: Contact between heated Asphalt and water can cause a violent eruption.

Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Incompatible Materials: Acids. Bases. Oxidizers.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

| Component | CAS No. | LD ₅₀ oral | LD ₅₀ dermal | LC ₅₀ |
|--|-------------|-----------------------|-------------------------|-------------------|
| Distillates (petroleum), petroleum residues vacuum | 68955-27-1 | Not available. | Not available. | Not available. |
| Asphalt | 8052-42-4 | Not available. | Not available. | Not available. |
| Polycyclic Aromatic Hydrocarbons | 130498-29-2 | Not available. | Not available. | Not available. |
| Hydrogen sulphide | 7783-06-4 | Not available. | Not available. | 444 ppm (rat); 4H |

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Central nervous system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. This product may contain small amounts of Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate.

Eye: Causes eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact.



Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Hot liquid product may cause serious thermal burns on direct contact. Asphalt fumes can increase susceptibility to sunburn.

Ingestion: Hot product may cause thermal burns. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen. If swallowed in large quantities, Asphalt can obstruct the intestine.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Kidneys. Central nervous system. Lymphoid tissue.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Prolonged and repeated contact with Petroleum distillates may lead to various skin disorders such as dermatitis, oil acne, folliculitis or skin tumours. Repeated skin contact with Petroleum distillates components has produced anemia, liver degeneration and injury to bone marrow and lymphoid tissues in laboratory animals. This product contains Polycyclic Aromatic Hydrocarbons. Prolonged contact with these compounds has been associated with the induction of skin and lung tumours, anemia, disorders of the liver, bone marrow and lymphoid tissues. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation; and damage to cardiovascular system.

Carcinogenicity: May cause cancer. Chronic inhalation of respirable droplets or oil mist from Petroleum distillates may contribute to the formation of pulmonary tumours. Long-term or repeated exposures to Asphalt fumes are possibly carcinogenic to humans.

Component Carcinogenicity

| Component | ACGIH | IARC | NTP | OSHA | Prop 65 |
|--|-------|-------------|-------------|------------------|---------|
| Distillates (petroleum), petroleum residues vacuum | A2 | Group 1 | List 1 | OSHA Carcinogen. | Listed. |
| Asphalt | A4 | Group 2B | Not listed. | OSHA Carcinogen. | Listed. |
| Polycyclic Aromatic Hydrocarbons | A2 | Not listed. | List 2 | OSHA Carcinogen. | Listed. |

Mutagenicity: Not available.

Reproductive Effects: Not available.



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SAFETY DATA SHEET / MATERIAL SAFETY DATA SHEET

Bunker C Fuel Oil Type 6

Date of Preparation: January 28, 2016

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.



Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

| Component | Section 302 (EHS) TPQ (lbs.) | Section 304 EHS RQ (lbs.) | CERCLA RQ (lbs.) | Section 313 | RCRA CODE | CAA 112(r) TQ (lbs.) |
|----------------------------------|-------------------------------------|----------------------------------|-------------------------|--------------------|------------------|-----------------------------|
| Polycyclic Aromatic Hydrocarbons | Not listed. | Not listed. | Not listed. | 313 | Not listed. | Not listed. |
| Hydrogen sulphide | 500 | 100 | 100 | 313 | U135 | 10000 |

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

| Component | CAS No. | RTK List |
|--|----------------|-----------------|
| Distillates (petroleum), petroleum residues vacuum | 68955-27-1 | Listed. |
| Asphalt | 8052-42-4 | Listed. |
| Polycyclic Aromatic Hydrocarbons | 130498-29-2 | Listed. |
| Hydrogen sulphide | 7783-06-4 | E |

Note: E = Extraordinarily Hazardous Substance

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

| Component | CAS No. | RTK List |
|--|----------------|-----------------|
| Distillates (petroleum), petroleum residues vacuum | 68955-27-1 | SHHS |
| Asphalt | 8052-42-4 | Listed. |
| Hydrogen sulphide | 7783-06-4 | SHHS |

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

| Component | CAS No. | RTK List |
|--|----------------|-----------------|
| Distillates (petroleum), petroleum residues vacuum | 68955-27-1 | S |
| Asphalt | 8052-42-4 | Listed. |
| Polycyclic Aromatic Hydrocarbons | 130498-29-2 | Listed. |
| Hydrogen sulphide | 7783-06-4 | E |

Note: E = Environmental Hazard; S = Special Hazardous Substance



Husky Energy

SAFETY DATA SHEET / MATERIAL SAFETY DATA SHEET

Bunker C Fuel Oil Type 6

Date of Preparation: January 28, 2016

California

California Prop 65: WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

| Component | Type of Toxicity |
|--|-------------------------|
| Distillates (petroleum), petroleum residues vacuum | cancer |
| Asphalt | cancer |
| Polycyclic Aromatic Hydrocarbons | cancer |

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: January 28, 2016

Version: 2.1

GHS SDS Prepared by: Deerfoot Consulting Inc.

Phone: (403) 720-3700