SAFETY DATA SHEET

1. Identification

Product identifier	**DHU Feed**
Other means of identification	
Product code	1202
Synonyms	BUNKER C (SLURRY)
Recommended use	Heating fuel.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	Consumers' Co-operative Refineries Limited
Address	P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada
Telephone	(306) 719-4353
Supplier	Consumers' Co-operative Refineries Limited
Address	P.O. Box 260; 9th Avenue North Regina, SK S4P 3A1 Canada
Telephone	(306) 719-4353
24-Hour emergency telephone	(613) 996-6666 - Canutec

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
	Physical hazards not otherwise classified	Category 1
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 2
	Specific target organ toxicity following repeated exposure	Category 2 (Bone Marrow, Liver, Thymus)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

Label elements

Signal word	Danger
Hazard statement	Flammable liquid and vapour. Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapour. May cause flash fire or explosion. May be fatal if swallowed and enters airways. Causes skin irritation. Harmful if inhaled. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (Bone Marrow, Liver, Thymus) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. These alone may be insufficient to remove static electricity. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe mist or vapour. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTRE/doctor if you feel unwell. In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish. In case of leakage, eliminate all ignition sources. Collect spillage.

Storage Store in a well-ventilated place. Keep cool. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petroleum, refined	68334-30-5	<100
Naphtha, (petroleum), catalytic reformed	68955-35-1	1 - 10
Benzene	71-43-2	< 1
Hydrogen sulphide	7783-06-4	< 1
Sulphur	7704-34-9	< 1

Constituents	CAS number	%
Gas oils (petroleum), heavy vacuum	64741-57-7	≤ 100
Distillates (petroleum), light thermal cracked	64741-82-8	≤ 100
Clarified oils (petroleum), catalytic cracked	64741-62-4	≤ 100
Gas oils (petroleum), light vacuum	64741-58-8	≤ 100
Distillates (petroleum), heavy catalytic cracked	64741-61-3	≤ 100

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTRE or doctor/physician if you feel unwell.

Skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary oedema and pneumonitis. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. Jaundice. Prolonged exposure may cause chronic effects. 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.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Carbon dioxide (CO_2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapours may form explosive mixtures with air. Vapours may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Flammable liquid and vapour.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil etc) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. The product is immiscible with water and will spread on the water surface. Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapour. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
Hydrogen sulphide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Petroleum, refined (CAS 68334-30-5)	TWA	100 mg/m3	Inhalable fraction and vapor.

Constituents	Type	Value	Form
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	TWA	5 mg/m3	Inhalable fraction.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	TWA	5 mg/m3	Inhalable fraction.
Gas oils (petroleum), light vacuum (CAS 64741-58-8)	TWA	5 mg/m3	Inhalable fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	8 mg/m3
		2.5 ppm
	TWA	1.6 mg/m3
		0.5 ppm
Hydrogen sulphide (CAS 7783-06-4)	Ceiling	21 mg/m3
		15 ppm
	TWA	14 mg/m3
		10 ppm
Petroleum, refined (CAS 68334-30-5)	TWA	100 mg/m3

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	
Sulphur (CAS 7704-34-9)	TWA	10 mg/m3	
Constituents	**Type**	**Value**	**Form**
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	TWA	1590 mg/m3	
		400 ppm	
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
Hydrogen sulphide (CAS 7783-06-4)	Ceiling	10 ppm	
Petroleum, refined (CAS 68334-30-5)	TWA	100 mg/m3	Vapor and aerosol.
Constituents	**Type**	**Value**	**Form**
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	TWA	1 mg/m3	Mist.
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	TWA	0.2 mg/m3	Mist.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	TWA	1 mg/m3	Mist.
Gas oils (petroleum), light vacuum (CAS 64741-58-8)	TWA	1 mg/m3	Mist.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
Hydrogen sulphide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Petroleum, refined (CAS 68334-30-5)	TWA	100 mg/m3	Inhalable fraction and vapor.
Constituents	**Type**	**Value**	**Form**
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	TWA	5 mg/m3	Inhalable fraction.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	TWA	5 mg/m3	Inhalable fraction.
Gas oils (petroleum), light vacuum (CAS 64741-58-8)	TWA	5 mg/m3	Inhalable fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Benzene (CAS 71-43-2)	STEL	2.5 ppm	
	TWA	0.5 ppm	
Hydrogen sulphide (CAS 7783-06-4)	STEL	15 ppm	
	TWA	10 ppm	
Petroleum, refined (CAS 68334-30-5)	TWA	100 mg/m3	Inhalable fraction and vapor.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Constituents	Type	Value	Form
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	TWA	5 mg/m3	Inhalable fraction.

Canada. Quebec OELs. (Ministry of Labour - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	15.5 mg/m3
		5 ppm
	TWA	3 mg/m3
		1 ppm
Hydrogen sulphide (CAS 7783-06-4)	STEL	21 mg/m3
		15 ppm
	TWA	14 mg/m3
		10 ppm

Constituents	Type	Value	Form
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	TWA	1590 mg/m3	
		400 ppm	
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Gas oils (petroleum), light vacuum (CAS 64741-58-8)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

Biological limit values

ACGIH

Components	Value	Determinant	Specimen	Sampling time
Benzene (CAS 71-43-2)	500 µg/g	t,t-Muconic acid	Creatinine in urine	*

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

Canada - Alberta OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.

Canada - British Columbia OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.
Petroleum, refined (CAS 68334-30-5) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.
Petroleum, refined (CAS 68334-30-5) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.
Petroleum, refined (CAS 68334-30-5) Can be absorbed through the skin.

Canada - Saskatchewan OELs: Skin designation

Petroleum, refined (CAS 68334-30-5) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Benzene (CAS 71-43-2) Can be absorbed through the skin.
Petroleum, refined (CAS 68334-30-5) Can be absorbed through the skin.

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide easy access to water supply or an emergency shower.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Observe any medical surveillance requirements. When using do not smoke. 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.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Oily liquid.
Colour	Dark brown.
Odour	Mild.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	121.11 - 398.89 °C (250 - 750 °F)
Flash point	> 23.0 °C (> 73.4 °F) Closed cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.7 %
Flammability limit - upper (%)	6 %
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapour pressure	> 1 (Air=1)
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Explosive limit	0.7 - 6 %
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidising agents.
Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary oedema and pneumonitis. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Components	**Species**	**Test results**
Benzene (CAS 71-43-2)		
Acute		
Oral		
LD50	Rat	930 mg/kg
Hydrogen sulphide (CAS 7783-06-4)		
Acute		
Inhalation		
LC50	Rat	> 0.38 mg/l, 960 Minutes
Sulphur (CAS 7704-34-9)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 5.43 g/m3, 4 Hours
Oral		
LD50	Rat	> 2200 mg/kg

Constituents	**Species**	**Test results**
Clarified oils (petroleum), catalytic cracked (CAS 64741-62-4)		
Acute		
Inhalation		
LC50	Rat	> 4100 mg/m3, 4 hours

Constituents	Species	Test results
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)		
Acute		
Inhalation		
Aerosol		
LC50	Rat	> 320 mg/m3, 4 Hours
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	> 3.2 g/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitiser.

Skin sensitisation This product is not expected to cause skin sensitisation.

Germ cell mutagenicity May cause genetic defects.

Carcinogenicity May cause cancer.

ACGIH Carcinogens

Benzene (CAS 71-43-2)	A1 Confirmed human carcinogen.
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	A4 Not classifiable as a human carcinogen.
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	A2 Suspected human carcinogen.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	A2 Suspected human carcinogen. A4 Not classifiable as a human carcinogen.
Gas oils (petroleum), light vacuum (CAS 64741-58-8)	A2 Suspected human carcinogen.
Petroleum, refined (CAS 68334-30-5)	A3 Confirmed animal carcinogen with unknown relevance to humans.

Canada - Alberta OELs: Carcinogen category

Benzene (CAS 71-43-2)	Confirmed human carcinogen.

Canada - Manitoba OELs: carcinogenicity

Benzene (CAS 71-43-2)	Confirmed human carcinogen.
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	Not classifiable as a human carcinogen.
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	Suspected human carcinogen.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	Not classifiable as a human carcinogen. Suspected human carcinogen.
Gas oils (petroleum), light vacuum (CAS 64741-58-8)	Suspected human carcinogen.
Petroleum, refined (CAS 68334-30-5)	Confirmed animal carcinogen with unknown relevance to humans.

Canada - Quebec OELs: Carcinogen category

Benzene (CAS 71-43-2)	Detected carcinogenic effect in humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Benzene (CAS 71-43-2)	1 Carcinogenic to humans.
Clarified oils (petroleum), catalytic cracked (CAS 64741-62-4)	2B Possibly carcinogenic to humans.
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)	2B Possibly carcinogenic to humans.
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	3 Not classifiable as to carcinogenicity to humans.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.
Distillates (petroleum), light thermal cracked (CAS 64741-82-8)	Known To Be Human Carcinogen.
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)	Known To Be Human Carcinogen.

Gas oils (petroleum), light vacuum (CAS 64741-58-8) Known To Be Human Carcinogen.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs (Bone Marrow, Liver, Thymus) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

Further information 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.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test results
Benzene (CAS 71-43-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	8.76 - 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	5.9 mg/l, 96 hours
Hydrogen sulphide (CAS 7783-06-4)			
Aquatic			
Fish	LC50	Lake whitefish (Coregonus clupeaformis)	0.002 mg/l, 96 hours
Petroleum, refined (CAS 68334-30-5)			
Aquatic			
Acute			
Crustacea	EL50	Daphnia	13 mg/l, 48 Hours
Fish	LL50	Oncorhynchus mykiss	21 mg/l, 96 Hours

Constituents		Species	Test results
Clarified oils (petroleum), catalytic cracked (CAS 64741-62-4)			
Aquatic			
Algae	EL50	Pseudokirchneriella subcapitata	0.75 mg/l, 72 Hours
Crustacea	EL50	Daphnia magna	2 mg/l, 48 Hours
Fish	LL50	Oncorhynchus mykiss	79 mg/l, 96 Hours
Distillates (petroleum), heavy catalytic cracked (CAS 64741-61-3)			
Aquatic			
Chronic			
Fish	NOAEL	Oncorhynchus mykiss	0.1 mg/l, 28 days
Gas oils (petroleum), heavy vacuum (CAS 64741-57-7)			
Aquatic			
Chronic			
Fish	NOAEL	Oncorhynchus mykiss	0.1 mg/l, 28 days
Gas oils (petroleum), light vacuum (CAS 64741-58-8)			
Aquatic			
Chronic			
Fish	NOAEL	Oncorhynchus mykiss	0.083 mg/l, 14 days

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Benzene (CAS 71-43-2) 2.13

Mobility in soil The product is insoluble in water.

Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

UN number	UN1268
UN proper shipping name	Petroleum products, n.o.s.
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	UN1268
UN proper shipping name	Petroleum products, n.o.s.
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1268
UN proper shipping name	Petroleum products, n.o.s.
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)

Benzene (CAS 71-43-2)

Precursor Control Regulations

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	10-January-2017
Revision date	-
Version No.	01
Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Disclaimer	To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.