

Light Oil

Safety Data Sheet (SDS)

Section 1: Identification

1 (a) Product Identifier: Light Oil


1 (b) Other means of Identification:

Benzol

1 (c) Recommended use and restrictions on use:

Chemical Intermediate.

1 (d) Manufacturer's Name & Address

Algoma 
105 West Street
Sault Ste. Marie Ontario, Canada P6A 7B4

1 (e) Emergency Telephone Numbers: 1 (705) 945-2271





Section 2: Hazard Identification

2 (a) Classification of the substance or mixture: Light Oil is considered a hazardous material according to the criteria specified in Reach and OSHA 29 CFR 1910.1200 Hazard Communication Standard.

Classification (GHS-US)

"GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), Third revised edition ST/SG/AC.10/30/Rev. 3" United Nations, New York and Geneva, 2009 have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2 (b) Signal Word, Hazard Statement(s), Symbols and Precautionary Statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)
	Carcinogenicity -1A Aspiration Hazard -1 Germ Cell Mutagenicity -1B Reproductive Toxicity -1A Repeated Exposure -1 Specific Target Organ Toxicity (STOT) Single Exposure -2	Danger	Suspected of causing cancer. Highly Flammable. May be fatal if swallowed and enters airways. May cause genetic defects. Toxic if inhaled. May damage fertility or unborn child. Causes damage to the blood forming system. Cause damage to the olfactory system. Causes damage to the lungs and nervous system through repeated exposure. Causes skin irritation. Causes serious eye irritation. May cause allergic skin reaction.
	Eye Irritation -2A Skin irritation -2 Skin Sensitization -1		
	Acute Toxicity, Inhalation -3		
	Flammable Liquid, Category -2		

Section 2: Hazard Identification (continued)

Precautionary Statement(s):

Prevention	Response	Storage/Disposal
<p>Do not breathe dusts / fume / gas / mist / vapor / spray. Keep away from heat/sparks/open flame/hot surfaces Wear protective gloves / protective clothing / eye protection / face protection. Keep container tightly closed. Contaminated work clothing must not be allowed out of the workplace. Ground and bond container and receiving equipment. Use explosion proof electrical equipment. Use only outdoors or in well ventilated areas. Use only non-sparking tools. Wash thoroughly after handling. Take precautionary measures against static discharge. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product.</p>	<p>If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed, concerned or feel unwell: Get medical advice/attention.</p> <p>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. If eye irritation persists: Get medical advice/attention.</p> <p>If on skin: Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse.</p> <p>If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth</p>	<p>Dispose of contents in accordance with federal, state and local regulations. Keep cool. Store in well ventilated area.</p>

2 (c) Hazards Not Otherwise Classified: None Known

2 (d) Unknown Acute Toxicity Statement (mixture): None Known

Section 3: Composition/Information on Ingredients

3 (a-c) Chemical Name, Common Name, CAS Number and Other Identifiers, and Concentration:

Chemical Name	CAS Number	% By Weight
Benzene	71-43-2	71.0
Toluene	108-88-3	13.0
Naphthalene	91-20-3	4.5
Ethyl Benzene	100-41-4	2.8
Indene	95-13-6	2.8
Xylene	1330-20-7	2.8
Styrene	100-42-5	1.9
Carbon Disulfide	75-15-0	0.4

Light oil may contain trace amounts of Hydrogen Cyanide <0.1%

Section 4: First Aid Measures

4(a) Description of necessary measures: If exposed, concerned or feel unwell: Get medical advice/attention.

- **Inhalation:** If inhaled: Remove person to fresh air and keep comfortable for breathing. Seek medical advice if discomfort persists.
- **Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. If eye irritation persists: Get medical advice attention.
- **Skin Contact:** Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse.
- **Ingestion:** if swallowed: Do not induce vomiting. Call a poison center or doctor/physician if you feel unwell. Rinse mouth.

4(b) Most important symptoms/effects, acute and delayed (chronic):

- **Inhalation:** May cause upper respiratory irritation. Systemic effects may include headache, dizziness, and loss of coordination, collapse and death, CNS depression, and cardiovascular depression. Inhalation of product may cause bronchial irritation or pulmonary edema. May cause kidney and/or liver function depression.
- **Eye:** Eye contact with liquid or vapour may cause irritation or eye damage.
- **Skin:** Prolonged contact with liquid will cause de-fatting of skin and irritation or dermatitis. May be absorbed through skin causing systemic effects.
- **Ingestion:** Do not take internally. May cause serious health effects or death. Aspiration of product may cause chemical pneumonia.

See Section 11-Toxicological for further Information.

4(c) Immediate Medical Attention and Special Treatment: If ingested use gastric lavage being careful to avoid aspiration.

Section 5: Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Use foam, carbon dioxide, dry chemical. Do not use water.

5(b) Specific Hazards arising from the chemical: Fire conditions may product flammable/explosive mixtures in air. Vapour is heavier than air and may travel to low lying areas. Open or closed containers may contain flammable vapours. Fire conditions may emit toxic gas and fumes. Closed containers may explode if exposed to high temperatures. Combustion products may contain oxide of carbon and organic acids.

5(c) Special protective equipment and precautions for fire-fighters: Self-contained NIOSH approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6: Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Remove all sources of ignition and ventilate enclosed spaces. Cleanup personnel should be equipped with a suitable NIOSH approved respirator and chemical protective clothing. For larger spills dike or dam with an inert material to prevent material from entering the water system. Follow applicable environmental legislation for disposal of cleanup materials.

6(b) Methods and materials for containment and clean up: Do not flush material into sewers or water systems. Cleanup material with dry sand or absorbent. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, provincial, state, and local regulations.

Section 7: Handling and Storage

7(a) Precautions for safe handling: Ground and bond containers for transfer. Use explosion proof electrical equipment. Use non-sparking tools. Prevent static discharge. Use on out of doors or in well ventilated areas. Wash thoroughly after handling. Do not smoke drink or eat while handling material. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use a NIOSH approved organic vapour respirator, impervious gloves, face shield and splash goggles should be worn when working with the product. An emergency shower and eye wash should be in the immediate work area where liquid splash is possible. Handle and store in accordance with local and all applicable regulatory standards.

7(b) Conditions for safe storage, including any incompatibilities: Store away from acids and incompatible materials. Store outdoors or in closed containers. Ensure all containers are properly grounded and bonded when transferring material. Eliminate sources of ignition. Store indoors in areas designed to comply with flammable liquid storage requirements.

Section 8: Exposure Controls/Personal Protection

8(a) Occupational Exposure Limits (OELs): The following exposure limits are offered as reference for an experienced industrial hygienist to review.

Ingredients	OSHA PEL ¹	NIOSH REL ²	ACGIH TLV – TWA ³	IDLH ⁴
Benzene	1.0 PPM	0.1 PPM	0.5 PPM	500 PPM
Toluene	200 PPM	100 PPM	50 PPM (Skin)	500 PPM
Naphthalene	10 PPM	10 PPM	10 PPM	250 PPM
Ethyl Benzene	100 PPM	100 PPM	20 PPM	800 PPM
Xylene	100 PPM	100 PPM	100 PPM	900 PPM
Styrene	100 PPM	50 PPM	20 PPM	700 PPM
Carbon Disulfide	20 PPM	1 PPM	1 PPM	500 PPM

1. OSHA Permissible Exposure Limits (PELs) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A (C) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. An Action level (AL) is used by OSHA and NIOSH to express a health or physical hazard. They indicate the level of a harmful or toxic substance/activity, which requires medical surveillance, increased industrial hygiene monitoring, or biological monitoring. Action Levels are generally set at one half of the PEL but the actual level may vary from standard to standard. The intent is to identify a level at which the vast majority of randomly sampled exposures will be below the PEL.

2. OEL's listed under the *Occupational Health and Safety Act* are 8-hour TWA (time-weighted average) concentrations, unless otherwise noted, as listed under section

3. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. A "skin" notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLVs are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.

4. The "immediately dangerous to life or health air concentration values (IDLHs)" are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970's by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.

5. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the

characteristics defined in the ACGIH 2014 TLVs[®] and BEIs[®] (Biological Exposure Indices) Appendix D, paragraph A.
 6. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by a limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5 mg/m³ for the respirable fraction.
 7. Respirable fraction. The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2015 TLVs[®] and BEIs[®] (Biological Exposure Indices) Appendix D.

8(b) Appropriate Engineering Controls: Use controls as appropriate to minimize fire risk and exposure to vapours or the products of combustion. Provide general or local exhaust ventilation systems to minimize airborne concentrations in confined areas. Provide sufficient general/local exhaust ventilation in pattern/volume to control inhalation exposures below current exposure limits and flammable/combustible atmospheres.

8(c) Individual Protection Measures:

- **Respiratory Protection:** If concentrations exceed established limits, seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use only a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with an organic vapour filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with organic vapour filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (Immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

Warning! Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.

- **Eyes:** Wear appropriate eye protection to prevent eye contact. For operations which result in elevating the temperature of the product, use chemical goggles or a full face respirator. Contact lenses should not be worn where industrial exposures to this material are likely.
- **Skin:** Wear appropriate personal protective clothing to prevent skin contact. Use impervious gloves and clothing where liquid splash is possible. Contaminated work clothing must not be allowed out of the workplace.
- **Other protective equipment:** An eyewash fountain and deluge shower should be readily available in the work area.

Section 9: Physical and Chemical Properties

<p>9 (a) Appearance (physical state, color, etc): Brown/Yellow, Liquid</p> <p>9 (b) Odor: Sweet Odour</p> <p>9 (c) Odor Threshold: NA</p> <p>9 (d) pH: NA</p> <p>9 (e) Melting Point/Freezing Point: NA</p> <p>9 (f) Initial Boiling Point and Boiling Range: 175.3^oF/79.6^oC</p> <p>9 (g) Flash Point: 60^oF/15.5^oC</p> <p>9 (h) Evaporation Rate: ND</p> <p>9 (i) Flammability (solid, gas): ND</p>	<p>9 (j) Upper and Lower Flammability or Explosive Limits: LEL 1.4% UEL 8.0 %</p> <p>9 (k) Vapor Pressure: 75 mm/hg (Benzene)</p> <p>9 (l) Vapor Density (Air = 1): 2.7 (Benzene)</p> <p>9 (m) Relative Density: Specific Gravity 0.87</p> <p>9 (n) Solubility: 0.01% Water soluble</p> <p>9 (o) Partition Coefficient n-octanol/water: ND</p> <p>9 (p) Auto-ignition Temperature: NA</p> <p>9 (q) Decomposition Temperature: ND</p> <p>9 (r) Viscosity: NA</p>
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Section 10: Stability and Reactivity

- 10(a) Reactivity:** Stable
- 10(b) Chemical Stability:** Stable under normal storage and handling conditions.
- 10(c) Possibility of hazardous reaction:** None Known
- 10(d) Conditions to Avoid:** Extremely high temperatures, open flame and Storage with strong acids.
- 10(e) Incompatible Materials:** Acids, Fluorides, Chlorides and Perchlorates.
- 10(f) Hazardous Decomposition Products:** Oxides of Carbon and Nitrogen.

Section 11: Toxicological Information

11(a-e) Information on toxicological effects: The following toxicity data has been determined for slag using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of WHMIS, OSHA and the EU CPL:

Hazard Classification	Hazard Category	Hazard Symbols	Signal Word	Hazard Statement
Acute Toxicity Hazard (covers Categories 1-4)	3		Danger	Toxic if inhaled

Eye Damage/ Irritation (covers Categories 1, 2A and 2B)	2		Warning	Causes serious eye irritation
Skin Irritation ()	2		Warning	Causes skin irritation
Skin/Dermal Sensitization (Covers Category 1)	1		Warning	May cause an allergic skin reaction
Aspiration Hazard (Category 1)	1		Danger	May fatal if aspirated
Germ Cell Mutagenicity (Covers Categories 1A, 1B and 2)	1B		Danger	May cause genetic defects
Carcinogenicity (Covers Categories 1A, 1B and 2)	1A		Danger	May cause cancer
Toxic Reproduction (Covers Categories 1A, 1B, & 2)	1B		Danger	May damage fertility or unborn child
Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3)	2		Warning	May cause central nervous system depression, respiratory irritation, drowsiness, and damage liver and blood cells
STOT following Repeated Exposure (covers Categories 1 and 2)	1		Danger	Cause damage to the blood forming system with prolonged or repeated exposure. Causes damage to the olfactory system. Cause damage to the lungs and central nervous system

Symptoms/Injuries:

Inhalation:

Prolonged exposure to dust may cause nose, throat or lung irritation or chronic lung disease.

Skin Contact:

Slag may cause dry skin, discomfort, irritation, dermatitis or allergic responses.

Eye Contact:

Slag dust may cause immediate or delayed eye irritation. Contact with wet slag may cause moderate to severe eye irritation or damage.

Ingestion:

Harmful if taken internally.

Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

No LC50 or LD 50 has been developed for Light Oil.

1. Toxicity

Benzene: Oral Rat LC50 =13,700 PPM

Naphthalene: Oral Rat LC50 >78 PPM

Toluene: LC50 = >20mg/L

Ethyl Benzene: LC50 = 2-20 mg/L

Xylene: LC50 = 4550 PPM

Indene: LC50 = NA

Styrene: LC50 = 9500 PPM

Carbon Disulfide LC50 = 650 PPM

2. No Skin (Dermal) Irritation data available for Light Oil or its individual components.

Benzene and Indene: Irritating to the skin.

Toluene: Irritating to the rabbit skin.

Styrene: Moderate erythema and slight necrosis, Rabbit.

Carbon Disulfide: Irritating to the skin. Highly irritating to the skin of Rabbits.

Xylene: Moderately irritating.

3. No Eye Irritation data available for Light Oil as a mixture. The following Eye Irritation information was found for the components:

Benzene and Indene: Causes eye irritation.

Toluene: Causes eye irritation.

Styrene: Moderate conjunctival irritation (Rabbit).

Carbon Disulfide: Highly irritating (Rabbit).

4. No Skin (Dermal) Sensitization data available for Light Oil. The following Skin (Dermal) Sensitization information was found for the components:

Indene: May cause skin sensitization.

5. No aspiration hazard information available for light oil as a mixture. The following aspiration hazard information was found for the components.

Benzene: Respiratory aspiration hazard.

Toluene: May be fatal if aspirated.

Indene: May result in edema and hemorrhage.

6. No Germ Cell Mutagenicity data available for light oil as a mixture. The following aspiration hazard information was found for the components.

Benzene: Positive in vitro and in vivo clastogenicity results.

7. Carcinogenicity: IARC, and NTP and OSHA do not list light oil. The following Carcinogenicity information was found for the components:

Benzene: IARC, OSHA, ACGIH and NTP consider Benzene to be a known human carcinogen.

8. No Toxic Reproduction data available for light oil as a mixture. The following Carcinogenicity information was found for the components.

Benzene: Both reproductive and teratogenicity positive results.

Toluene: Low incidence of malformation.

Carbon Disulfide: May effect the Testes with related decrease in testosterone.

9. No Specific Target Organ Toxicity (STOT) following a Single Exposure data for Light Oil: The following Carcinogenicity information was found for the components.

Benzene: Central nervous system depression. Lung, liver, red blood cells. **Indene:** Respiratory irritation

Carbon Disulfide: Single Exposure Category 3 (Skin/Eye) **Naphthalene:** Eye and skin irritation

Toluene: Head ache, dizziness **Styrene:** Eye, skin, respiratory irritation

10. No Specific Target Organ Toxicity (STOT) following a repeated Exposure data for Light Oil: The following Carcinogenicity information was found for the components.

Benzene: Hematopoietic system, spleen, and liver damage. Anemia, decreased hemoglobin. Benzene is designated as a confirmed human carcinogen.

Toluene: Ataxia, hypothermia, leucocyte decrease, increased liver and kidney weights.

Naphthalene: Olfactory lesions, cataracts, jaundice, kidney and liver damage.

Styrene: Respiratory system, CNS, liver and reproductive toxicity.

Indene: Liver, kidney, spleen

Carbon Disulfide: Neurotoxicity, chronic effects on the heart, liver and skin

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2009, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Program on Chemical Safety (IPCS).

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s) and potential resultant components from further processing:

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations may cause irritation to the eyes, skin and mucous membranes. Central nervous system depression, nausea, headache, dizziness, upper respiratory irritation.
- **Eye:** Excessive exposure may cause severe irritation or eye damage.
- **Skin:** Skin contact with material will defat skin. Can be absorbed through intact skin. Can cause allergic skin responses.
- **Ingestion:** Ingestion of harmful amounts of this product may cause nausea or vomiting, collapse or death.

Acute Effects by component:

- **Benzene:** Irritation to the eyes, skin, upper respiratory system, CNS depression, unconsciousness, coma, respiratory failure or death.
- **Toluene:** Irritation to the eyes, skin, upper respiratory system, CNS depression, unconsciousness, coma, respiratory failure or death.
- **Naphthalene:** Irritation to the eyes, skin, upper respiratory system, CNS depression, unconsciousness, coma, respiratory failure or death.
- **Styrene:** Respiratory swelling and pneumonitis, CNS depression, unconsciousness, coma, respiratory failure or death.
- **Indene:** May be harmful if swallowed.
- **Carbon Disulfide:** Excessive quantities may be fatal if inhaled or ingested. Readily absorbed through the skin.
- **Xylene:** Irritation to the eyes, skin, upper respiratory system, CNS depression, unconsciousness, coma, respiratory failure or death. May cause liver and kidney damage.

Delayed (chronic) Effects by component:

- **Benzene:** Product is a confirmed human carcinogen (Leukemia). CNS depression, headache loss of appetite, aplastic anemia, bone marrow damage.
- **Toluene:** Chronic overexposure may cause headache, nausea, memory loss, loss of appetite, reduction in red blood cells, reduction in white blood cells, damage to the optic nerve, and allergic skin responses.
- **Naphthalene:** Chronic overexposure may cause headache, nausea, memory loss, loss of appetite, cataracts and retinal hemorrhage and kidney damage.
- **Styrene:** Chronic overexposure may cause reduction in colour discrimination and perception.
- **Indene:** Toxic to the kidney and liver, spleen, upper respiratory system and eyes.
- **Carbon Disulfide:** Chronic overexposure may cause neurological and cardiovascular effects. May cause impaired fertility or damage the unborn child.
- **Xylene:** Chronic overexposure may cause headache, nausea, memory loss, loss of appetite. May cause allergic skin responses, eye irritation or damage. May damage the bone marrow causing low blood cell counts.

12(a) Ecotoxicity (aquatic & terrestrial): No Data Available for light oil. However, individual components of the product may be toxic to the environment.

- Benzene: LC50: Fish, mg/L; LC50: Salmo trutta 12 mg/L/L hr.
- Toluene: LC50: Pimephales promelas 34.3 mg/L; LC50: Daphnia magna 313 mg/L

12(b) Persistence & Degradability: Vapour phase benzene and toluene are degraded in the atmosphere, the half-life for this reaction is 13 days for benzene and 3 days for toluene.

12(c) Bioaccumulative Potential: No data available.

12(d) Mobility (in soil): Benzene and toluene are moderately mobile in soil. Evaporation is the primary loss mechanism for water. Volatilization half-lives for water are anticipated to be between 1 hour and 3.5 days for benzene and 1 hour and 4 days for toluene.

12(e) Other adverse effects: None Known

Hazard Category: Acute 2, Chronic 2

Signal Word: No Signal Word



Hazard Symbol:

Hazard Statement: Toxic to aquatic life with long lasting effects.

Section 13: Disposal Considerations

Disposal: Dispose of material in accordance with applicable federal, state, provincial or local regulations.

Section 14: Transport Information

14 (a-g) Transportation Information: All provincial, federal, and state laws and regulations that apply to the transport of this type of material must be adhered to.

Transport Canada, *Transportation of Dangerous Goods (TDG)*

Class 3, division 1 (Flammable Liquid).

Benzene (3-II)

Toluene (3-II)

Naphthalene (4.1-II)

Styrene (3-III)

Indene (3-III)

Xylene (3-III)

US Department of Transportation (DOT)

Light oil classified as a class 3 hazardous material, (Flammable liquid). Shipping name: RQ, UN1136, coal tar distillates. Packing Group II

International Maritime Dangerous Goods (IMDG) Rail (RID). Follow the US DOT Hazardous Materials Regulation. (Class 3, Flammable liquid).

International Carriage of Dangerous Goods by Road (ADR) Regulates Light Oil as a Class 3 Flammable Liquid. Shipping name RQ UN1136, Coal Tar Distillates, Flammable (Class 3 PGII minimum flashpoint 15.5 °C)

International Air Transport Association (IATA)

Shipping name: RQ, UN1136, Coal Tar Distillates. Class 3, Hazard Label (Flammable Liquid. UN No. 1136, Packing Group II (EQ): E2

Section 15: Regulatory Information

Regulatory Information: *The following listing of regulations relating to an Algoma product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

SARA Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard; Fire Hazard

Section 313 Supplier Notification: Light Oil contains the following toxic substances subject to reporting.

Components	% by weight
Benzene	71
Toluene	13
Naphthalene	4.5
Ethyl Benzene	2.8
Indene	2.8
Xylene	2.8
Styrene	1.9
Carbon Disulfide	0.4

SARA 311/312 Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Regulations Key:

CAA Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])

CERCLA Comprehensive Environmental Response, Compensation and Liability Act (42 USC Secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)

CWA Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])

RCRA Resource Conservation Recovery Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)

SARA Superfund Amendments and Reauthorization Act of 1986 Title III Section 302 Extremely Hazardous Substances (42 USC Secs. 11023, 13106; 40 CFR sec. 372.65) and

Section 313 Toxic Chemicals (42 USC Secs. 11023, 13106; 40 CFR Sec. 372.65 [as of 6/30/05])

TSCA Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])

SDWA Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

Other Regulations: WHMIS

Ingredient:

WHMIS Classification:

Benzene	D2-A, D2-B, B-2
Toluene	D2-A, D2-B, B-2
Naphthalene	B4, D2-A
Ethyl Benzene	D2-A, D2B, B2
Indene	B-3
Xylene	B-2, D2-A, D2-B
Styrene	D2-A, B-2
Carbon Disulfide	B-2, D1-B, D2-A, D2-B

This is a list of some of the regulations to be followed and may not be complete. Ensure you verify compliance with all applicable Provincial, Federal, State and Local Laws and Regulations

Section 16: Other Information

Prepared By: Algoma Steel Inc.

Revised Date: 11/30/18

Disclaimer

The information contained in this safety data sheet is based on information available to Algoma Steel Inc. (ESI) and is believed to be accurate. Where this information is based on data developed by third parties, Algoma expressly denies liability. Algoma makes no warranty, expressed or implied, regarding the accuracy this information or data or the results obtained from its use. All recommendations are made without guarantee, since the conditions of use of this product are beyond Algoma's control. Algoma assumes no responsibility for any damages resulting from the use of this product described herein. Please consult Algoma for further information.