Lloyd Sales Oil

SECTION 1. IDENTIFICATION

Product Identifier	Lloyd Sales Oil
Other Means of Identification	Produced Crude, Crude Oil, Sweet Crude
Product Family	Crude Oil
Recommended Use	Refinery feedstock.
Restrictions on Use	None known.
Manufacturer/Supplier Identifier	Devon Canada Corporation 2000, 400 - 3rd Avenue SW Calgary, Alberta T2P 4H2 (403) 232-7100
Emergency Phone No.	CANUTEC, 1-888-CAN-UTEC (226-8832), (24 hr)

SECTION 2. HAZARD IDENTIFICATION

Classification

Flammable liquid - Category 4; Acute toxicity (Oral) - Category 4; Acute toxicity (Dermal) - Category 4; Acute toxicity (Inhalation) - Category 4; Skin irritation - Category 2; Serious eye damage - Category 2; Aspiration hazard - Category 1

Label Elements

Signal Word:
Danger

Hazard Statement(s):

H227	Combustible liquid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H320	Causes eye irritation.
H335	May cause respiratory irritation.

Precautionary Statement(s):

P210	Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, lighting, and other equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapours.

P280 Wear protective gloves/protective clothing.

Other Hazards

EMERGENCY OVERVIEW :

FLAMMABLE LIQUID. In use may form flammable vapour-air mixture. Electrostatic charges may be generated during handling. Electrostatic charges may cause fire.

General Hygiene Comments :
Do NOT eat, drink or store food in work areas.
Remove contaminated clothing and protective equipment before entering eating areas or leaving work area.
Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Crude Oil	8002-05-9	100	Petroleum crude oil
Methane	74-82-8	<0.01	Methyl hydride
Ethane	74-84-0	<0.01	Ethyl hydride
Propane	74-98-6	<0.01	Propyl hydride
Isobutane	75-28-5	<0.01	2-methylpropane
n-Butane	106-97-8	<0.01	Butyl hydride
Isopentane	78-78-4	<0.01	2-methylbutane
n-Pentane	109-66-0	<0.01	Pentyl hydride
Hexanes	110-54-3	<0.01	Not available
Heptanes	142-82-5	0.01 - 0.05	Not available
Octanes	111-65-9	0.01 - 0.10	Not available
Nonanes	111-84-2	0.01 - 0.10	Not available
Decanes	124-18-5	0.15 - 0.30	Not available
Benzene	71-43-2	0.01 - 0.03	Benzol
Toluene	108-88-3	<0.01	Methylbenzene
Ethylbenzene	100-41-4	<0.01	Phenylethane
Xylene (mixed isomers)	1330-20-7	0.01 - 0.03	1,2/1,3/1,4-dimethylbenzene

Notes

Concentrations are expressed in % weight/weight.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. If the victim has difficulty breathing or tightness in the chest, is dizzy, vomiting, or unresponsive, administer oxygen with rescue breathing or CPR as required. Obtain medical attention immediately.

Skin Contact

Avoid direct contact. Wear chemical protective clothing if necessary. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If eye irritation persists, get medical advice or attention.

Ingestion

Rinse mouth with water. Immediately call a Poison Centre or doctor. Do not induce vomiting.

Most Important Symptoms and Effects, Acute and Delayed

If inhaled:
Can irritate the nose and throat. Symptoms may include headache, nausea, dizziness, drowsiness and confusion.
If in eyes:
May cause moderate to severe irritation. Symptoms include sore, red eyes, and tearing.
If swallowed:
Small amounts can irritate the mouth, throat and stomach.
May be drawn into the lungs if swallowed or vomited, causing severe lung damage. Death can result.

Immediate Medical Attention and Special Treatment

Special Instructions

Treat symptomatically. Consult a Poison Control Centre for guidance.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Small fire: Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.
Large fire: Water spray, fog or regular foam.
Do not use straight streams.
Move containers from fire area if you can do it without risk.
Fire involving Tanks or Car/Trailer Loads:
Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
Cool containers with flooding quantities of water until well after fire is out.
Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
ALWAYS stay away from tanks engulfed in fire.
For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Unsuitable Extinguishing Media

Do not use water in a stream or jet.

Specific Hazards Arising from the Product

May accumulate in hazardous amounts in low-lying areas especially inside confined spaces, resulting in a fire and/or health hazard.

Special Protective Equipment and Precautions for Fire-fighters

Wear full protective clothing and self-contained breathing apparatus. Fight fire from a safe distance or a protected location. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Minimize the use of water to prevent environmental contamination.

Methods and Materials for Containment and Cleaning Up

Small spills or leaks: stop or reduce leak if safe to do so. Contain and soak up spill with absorbent that does not react with spilled product. Do NOT use combustible materials such as sawdust. Place used absorbent into suitable, covered, labelled containers for disposal.
Large spills or leaks: dike spilled product to prevent runoff. Do not direct water at spill or source. Knock down vapour

with fog or fine water spray.

Other Information

Report spills to local health, safety and environmental authorities, as required.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Prevent uncontrolled release of product. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Do not use near welding operations or other high energy sources. Do not weld, cut or perform hot work on empty container until all traces of product have been removed. Electrically bond and ground equipment. Ground clips must contact bare metal. Do not carry or transfer this product in an enclosed space (e.g. in an elevator or inside a vehicle). Wear personal protective equipment to avoid direct contact with this chemical. Do not puncture or incinerate container even when empty.

Conditions for Safe Storage

Store in an area that is: cool, temperature-controlled, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity), clear of combustible and flammable materials (e.g. old rags, cardboard), out of direct sunlight and away from heat and ignition sources.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**TWA**	**STEL**	**TWA**	**Ceiling**	**8-hr TWA**	**TWA**
Crude Oil	5 mg/m3		5 mg/m3			
Methane	Not established					
Ethane	Not established					
Propane	1000 ppm					
Isobutane		1000 ppm				
n-Butane		1000 ppm	800 ppm			
Isopentane	600 ppm					
n-Pentane	600 ppm		1000 ppm			
Hexanes	50 ppm Skin		500 ppm			
Heptanes	400 ppm	500 ppm	500 ppm			
Octanes	300 ppm		500 ppm			
Nonanes	200 ppm					
Decanes	Not established		Not established			
Benzene	0.5 ppm A1 Skin	2.5 ppm A1 Skin				
Toluene	20 ppm A4		200 ppm			
Ethylbenzene	100 ppm	125 ppm				
Xylene (mixed isomers)	100 ppm A4	150 ppm A4				

Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles.

Skin Protection

Avoid repeated or prolonged skin contact. Wear chemical protective clothing e.g. gloves, aprons, boots.

Respiratory Protection

Not normally required if product is used as directed.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Brown - black liquid.
Odour	Hydrocarbon
Odour Threshold	Not available
pH	Not applicable
Melting Point/Freezing Point	Not available (melting); Not available (freezing)
Initial Boiling Point/Range	236 ºC
Flash Point	>= 120 ºC
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable (liquid).
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	7.3 kPa at 37.8°C (100°F)
Vapour Density (air = 1)	> 1 (estimated)
Relative Density (water = 1)	0.994 - 0.996 at 15 ºC
Solubility	Practically insoluble in water; Highly soluble in common organic solvents.
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	7511 centistokes at 40°C (104°F) (kinematic)

Other Information

Physical State	Liquid
Molecular Formula	Not available
Molecular Weight	Not available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Not sensitive to mechanical impact.

Conditions to Avoid

Heat. High temperatures. Open flames, sparks, static discharge, heat and other ignition sources. Incompatible materials.

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid).

Hazardous Decomposition Products

Combustion releases carbon dioxide, trace amounts of sulfur oxides, and nitrogen oxides. A lack of oxygen during combustion can produce carbon monoxide and other toxic and flammable products. Hazardous decomposition products

are not expected to form during normal storage.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Crude Oil	> 4300 ppm (rat) (vapour)	> 5 g/kg (rat)	> 2 g/kg (rat)
Methane	Not available	Not available	Not applicable
Ethane	Not available	Not available	Not available
Propane	> 800000 ppm (rat) (30-minute exposure)	Not applicable	Not applicable
Isobutane	368000 mg/kg (male mouse) (4-hour exposure) (vapour)	> 5000 mg/kg	> 5000 mg/kg
n-Butane	658 mg/L (rat) (4-hour exposure)	Not available	Not available
Isopentane	140000 ppm (mouse) (2-hour exposure) (vapour)	> 2000 mg/kg (rat)	Not available
n-Pentane	6106 ppm (rat) (4-hour exposure)	> 2000 mg/kg (rat)	Not available
Hexanes	73680 ppm (rat) (4-hour exposure) (vapour)	32290 mg/kg (male rat)	> 3295 mg/kg (rabbit)
Heptanes	~ 25000 ppm (rat) (4-hour exposure)	> 15000 mg/kg (rat)	Not available
Octanes	25250 ppm (rat) (4-hour exposure)	Not available	Not available
Nonanes	3200 ppm (rat) (4-hour exposure)	> 15000 mg/kg	Not available
Decanes	72300 mg/m3 (mouse) (2-hour exposure) (aerosol)	Not available	Not available
Benzene	13700 ppm (rat) (4-hour exposure)	930 mg/kg (rat)	> 8240 mg/kg (rabbit)
Toluene	7585 ppm (rat) (4-hour exposure)	5580 mg/kg (male rat)	12125 mg/kg (rabbit)
Ethylbenzene	~ 4000 ppm (rat) (4-hour exposure)	3500 mg/kg (rat)	15380 mg/kg (rabbit)
Xylene (mixed isomers)	6350 ppm (male rat) (4-hour exposure)	3523 mg/kg (rat)	> 1700 mg/kg (rabbit)

Skin Corrosion/Irritation

May cause mild irritation based on information for closely related chemicals. Contact may cause irritation to the skin and mucous membranes upon prolonged and/or repeated skin contact. Prolonged or repeated contact to petroleum oil with skin may cause defatting of the skin leading to redness, itching, inflammation, cracking, dermatitis (rash).

Serious Eye Damage/Irritation

May be irritating to eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Not an expected route of exposure, but vapours may cause irritation of the nose and throat.

Skin Absorption

Liquid may be absorbed through the skin if large areas of skin are exposed.

Ingestion

May cause gastrointestinal irritation. Symptoms may include abdominal pain, stomach upset, nausea, vomiting, and diarrhea.
If small amounts are ingested: can irritate the mouth, throat and stomach.
If large amounts are ingested: harmful.

Aspiration Hazard

May be drawn into the lungs (aspirated) if swallowed or vomited.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Material in general is not expected to cause harm. Although the material in general is not considered to have chronic effects, it may contain benzene, a listed carcinogen.

Respiratory and/or Skin Sensitization

Not a respiratory sensitizer. Not a skin sensitizer.

Carcinogenicity

The material in general is not considered a carcinogen, however, all appropriate precautions should still be taken due to the presence of trace amounts of benzene in the product.

Reproductive Toxicity

Development of Offspring

Material in general is not expected to cause harm. The material in general is not expected to produce teratogenic or embryotoxic effects.

Sexual Function and Fertility

Material in general is not expected to cause harm. The material in general is not expected to have toxic reproductive effects.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

Material in general is not expected to cause harm. The material in general is not expected to produce mutagenic effects.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life, animals, birds.

Persistence and Degradability

Not expected to be removed rapidly from aquatic environments by evaporation.

Bioaccumulative Potential

This product and its degradation products are not expected to bioaccumulate.

Mobility in Soil

If released into the environment, this product is expected to move slowly through the soil, based on physical and chemical properties. Contamination of groundwater could occur. If released into soil, this material will absorb and may biodegrade in anaerobic conditions. In water it may become volatile. Photo-oxidation products may include phenol, nitrophenols, nitrobenzene, formic acid.

Other Adverse Effects

There is no information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Material Disposal:
This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground or into any body of water. Do not discharge into areas where there is a risk of forming an explosive mixture with air.

Local Legislation:
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 and must be complied with.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	1267	PETROLEUM CRUDE OIL	3	III
US DOT	1267	PETROLEUM CRUDE OIL	3	III

Environmental Hazards Potential Marine Pollutant

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Emergency Response Guide No. GUIDE 128

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

This section is not required by WHMIS 2015.

SECTION 16. OTHER INFORMATION

NFPA Rating **Health - 2** **Flammability - 2** **Instability - 0**

SDS Prepared By Maxxam Analytics

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Key to Abbreviations ACGIH® = American Conference of Governmental Industrial Hygienists
OSHA = US Occupational Safety and Health Administration
RTECS® = Registry of Toxic Effects of Chemical Substances

References CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA (“BIOVIA”). Available from Canadian Centre for Occupational Health and Safety (CCOHS).

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SDS representative sample(s) :

Devon Lloyd Sales Oil