

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: EXXAL 13 ALCOHOL
Product Description: Alcohol
MSDS Number: 9666
Intended Use: Chemical feedstock

COMPANY IDENTIFICATION

Supplier: Imperial Oil Chemicals Division
240 4th Avenue S.W.
Calgary, ALBERTA. T2P 3M9 Canada
24 Hour Environmental / Health Emergency Telephone: 519-339-2145
Transportation Emergency Phone Number: 519-339-2145
Product Technical Information: 1-800-663-4109

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation.

NFPA Hazard ID:	Health: 2	Flammability: 1	Reactivity: 0
HMS Hazard ID:	Health: 2	Flammability: 1	Reactivity: 0

Note: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin Contact

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

Eye Contact

Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: 122C (252F) [ASTM D-93]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D

Autoignition Temperature: 260°C (500°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

Notification Procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Do not touch or walk through spilled material. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek advice of a specialist

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction

and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Avoid contact with eyes. Flammable levels of hydrogen may build up in the headspace during shipping. As a precautionary measure, truck, rail and ISO container shipments may have been purged with nitrogen before loading. Nitrogen is a simple asphyxiant and containers should be opened in a well ventilated area. For marine shipments, procedures for closed gauging and sampling should be employed. Use proper bonding and/or earthing procedures. Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight.

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]

Transport Pressure: [Ambient]

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be earthed and bonded.

Storage Temperature: [Ambient]

Storage Pressure: [Ambient]

Suitable Containers/Packing: Tank Trucks; Tank Cars; Drums

Suitable Materials and Coatings: Carbon steel; Stainless steel; Aluminium; Polypropylene; PTFE; Polyethylene

Unsuitable Materials and Coatings: Natural rubber; Butyl rubber; Vinyls

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Substance Name	Form	Limit/Standard	Note	Source
ALCOHOLS C11-C14-ISO-, C13-RICH		TWA 50 ppm		Supplier

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical / oil resistant clothing if contact with material is likely.

Specific Hygiene Measures: 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. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid

Form: clear

Colour: Colourless

Odour: Alcohol

Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 C): 0.85
Density (at 20 °C): 850 kg/m³ (7.09 lbs/gal, 0.85 kg/dm³)
Flash Point [Method]: 122C (252F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: 260°C (500°F)
Boiling Point / Range: 250C (482F) - 270C (518F)
Vapour Density (Air = 1): > 1 at 101 kPa
VAPOUR PRESSURE: < 0.001 kPa (0.01 mm Hg) at 20°C | 0.003 kPa (0.02 mm Hg) at 50C
 | 0.2 kPa (1.5 mm Hg) at 100C
Evaporation Rate (N-Butyl Acetate = 1): < 0.01
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 16.6 cSt (16.6 mm²/sec) at 40°C | 47 cSt (47 mm²/sec) at 20C
Oxidizing properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: <-40°C (-40°F)
Melting Point: N/A
Molecular Weight: 200
Hygroscopic: No
Coefficient of Thermal Expansion: 0.0008 V/V/DEG C

SECTION 10	STABILITY AND REACTIVITY
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STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

Materials To Avoid: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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Acute Toxicity

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
INHALATION	
Toxicity: LC50 > 5000 ppm	Minimally Toxic. Based on test data for the material.
Irritation: Data available.	Negligible hazard at ambient/normal handling temperatures. Based on test data for the material.
Ingestion	
Toxicity: LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for the material.
Skin	
Toxicity: LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for the material.
Irritation: Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for the material.
Eye	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test

data for the material.

CHRONIC/OTHER EFFECTS

For the product itself:

Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects.

Additional information is available by request.

CMR Status: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1
2 = IARC 2A

3 = IARC 2B
4 = ACGIH ALL

5 = ACGIH A1
6 = ACGIH A2

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be very toxic to aquatic organisms.

Material -- Not expected to demonstrate chronic toxicity to aquatic organisms.

MOBILITY

Material -- Expected to partition to sediment and wastewater solids. Minimally volatile.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

Hydrolysis:

Material -- Transformation due to hydrolysis not expected to be significant.

Photolysis:

Material -- Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation:

Material -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Material -- Potential to bioaccumulate is low.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal

Regulatory Disposal Information

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14	TRANSPORT INFORMATION
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LAND (TDG) : Not Regulated for Land Transport

Footnote: If shipped over water, product TDG classification as shown below for SEA (IMDG).

LAND (DOT)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Tridecyl alcohol)
Hazard Class & Division: 9
ID Number: 3082
Packing Group: III
Marine Pollutant: MP: 100 % weight PP: 0 % weight
ERG Number: 171
Label(s): 9
Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Tridecyl Alcohol), 9, PG III, MARINE POLLUTANT

SEA (IMDG)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Tridecyl alcohol)
Hazard Class & Division: 9
EMS Number: F-A, S-F
UN Number: 3082
Packing Group: III
Marine Pollutant: Yes
Label(s): 9
Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Tridecyl Alcohol), 9, PG III,, MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Tridecyl alcohol)
Hazard Class & Division: 9
UN Number: 3082
Packing Group: III
Label(s) / Mark(s): 9
Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Tridecyl alcohol), 9, PG III

SECTION 15	REGULATORY INFORMATION
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WHMIS Classification: Not controlled

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations.

CEPA: All components of this material are either on the Canadian Domestic Substances List (DSL), exempt, or have been notified under CEPA.

National Chemical Inventory Listing: AICS, IECSC, DSL, EINECS, ENCS, KECI, PICCS, TSCA

The Following Ingredients are Cited on the Lists Below: None.

--REGULATORY LISTS SEARCHED--

1 = TSCA 4
2 = TSCA 5a2

3 = TSCA 5e
4 = TSCA 6

5 = TSCA 12b
6 = NPRI

SECTION 16	OTHER INFORMATION
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N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 04: First Aid Skin was modified.

Section 13: Regulatory Disposal Information - Header was added.

Section 04: First Aid Eye - Header was modified.

Section 04: First Aid Ingestion - Header was modified.

Section 05: Fire Fighting Measures - Fire Fighting Instruction was modified.

Section 06: Notification Procedures - Header was modified.

Section 10: Materials To Avoid - Header was modified.

Section 13: Regulatory Disposal Information - Header was deleted.

Section 13: Empty Container Warning was modified.

Section 09: Phys/Chem Properties Note was modified.

Section 11: Ingestion Acute Lethality - Header was modified.

Section 09: Boiling Point C(F) was modified.

Section 08: Hand Protection was modified.

Section 09: Vapour Pressure was modified.

Section 09: Vapour Pressure - Header was modified.

Section 07: Handling and Storage-Handling was modified.

Section 07: Handling and Storage-Storage Phrases was modified.

Hazard Identification: Physical/Chemical Hazard was deleted.

Section 07: Transport Pressure kPa was modified.

Section 07: Storage Pressure kPa was modified.

Section 07: Static Accumulator was modified.

Section 05: Hazardous Combustion Products was modified.

Section 06: Accidental Release-Spill Management-Land was modified.

Section 06: Accidental Release- Spill Management- Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Flash Point C(F) was modified.
Section 09 Viscosity was modified.
Section 14: Transport Document Name was added.
Section 14: Sea (IMDG) - Header was modified.
Section 14: Label(s) - Header was modified.
Section 14: Transport Document Name was added.
Section 14: Marine Pollutant was modified.
Section 14: Transport Document Name was added.
Section 11: Other Health Effects Header was deleted.
Section 15: National Chemical Inventory Listing - Header was modified.
Hazard Identification: Physical/Chemical Hazards - Header was deleted.
Composition: No components was deleted.
Section 11: Chronic Tox - Component - Header was deleted.
Section 08: OEL Table - Form Column - Header was deleted.
Section 08: OEL Table - Limit Column - Header was deleted.
Section 08: OEL Table - Notation Column - Header was deleted.
Section 08: OEL Table - Source Column - Header was deleted.
Section 08: OEL Table - Substance Name Column - Header was deleted.
Section 11: Chronic Tox - Component - Header was added.
Section 11: Other Health Effects Header was added.
Composition: No components was added.
Section 08: OEL Table - Substance Name Column - Header was added.
Section 08: OEL Table - Form Column - Header was added.
Section 08: OEL Table - Limit Column - Header was added.
Section 08: OEL Table - Notation Column - Header was added.
Section 08: OEL Table - Source Column - Header was added.
Section 04: First Aid Skin - Header was modified.

WHMIS Classification: Not controlled

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