Material Safety Data Sheet
Ethyllithium, 1.7M solution in dibutyl ether

ACC# 09616

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethyllithium, 1.7M solution in dibutyl ether
Catalog Numbers: AC377570000, AC377571000, AC377578000
Synonyms: None Known.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
142-96-1	Butyl ether	85-95	205-575-3
811-49-4	Ethyllithium	5-15	212-370-2

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless clear liquid. Flash Point: 25 deg C.
Highly flammable. **Danger!** Reacts violently with water liberating highly flammable gases. Corrosive. Water-reactive. Causes burns by all exposure routes. Pyrophoric. Spontaneously flammable in air. Flammable liquid and vapor.
Target Organs: Respiratory system, gastrointestinal system, eyes, skin, mucous membranes.

Potential Health Effects
Eye: Causes eye burns.
Skin: Causes skin burns.
Ingestion: Causes gastrointestinal tract burns.
Inhalation: Causes chemical burns to the respiratory tract.
Chronic: Chronic exposure may cause effects similar to those of acute exposure.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid immediately.
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Evacuate area and fight fire from a safe distance. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Material can spontaneously ignite (pyrophoric) when exposed to air at normal or slightly elevated temperatures. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Water Reactive. Material will react with water and may release a flammable and/or toxic gas. Flammable liquid and vapor. May re-ignite after fire is extinguished.
Extinguishing Media: Do NOT use halogenated agents. Do NOT use water, carbon dioxide, or foam. Contact professional fire-fighters immediately. Smother with dry sand, dry clay, dry ground limestone (CaCO3), or use approved Class D extinguishers.
Flash Point: 25 deg C (77.00 deg F)
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 2

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Isolate area and deny entry. Provide ventilation. Do not expose spill to water. Place under an inert atmosphere.

Section 7 - Handling and Storage

Handling: Do not allow water to get into the container because of violent reaction. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not ingest or inhale. Handle under an inert atmosphere. Do not allow contact with water. Use only in a chemical fume hood. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep away from heat, sparks and flame.
Storage: Keep away from sources of ignition. Store in a cool, dry place. Do not store in direct sunlight. Store in a tightly closed container. Flammables-area. Corrosives area. Water free area. Store under nitrogen.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Butyl ether	none listed	none listed	none listed
Ethyllithium	none listed	none listed	none listed

OSHA Vacated PELs: Butyl ether: No OSHA Vacated PELs are listed for this chemical. Ethyllithium: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Appearance: colorless
Odor: solvent odor
pH: >7
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point: Not available.
Decomposition Temperature: Not available.
Solubility: vigorous reaction
Specific Gravity/Density:0.760
Molecular Formula:C2H5Li
Molecular Weight:36

Section 10 - Stability and Reactivity

Chemical Stability: Powder or liquid is pyrophoric. Reacts violently with water.
Conditions to Avoid: Incompatible materials, light, ignition sources, exposure to air, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials: Strong oxidizing agents, carbon dioxide, halides, water, violent reaction with halogens, alcohols, acids.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, lithium oxide.
Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:
CAS# 142-96-1: EK5425000
CAS# 811-49-4 unlisted.
LD50/LC50:
CAS# 142-96-1:
Inhalation, mouse: LC50 = 169 gm/m3/15M;
Oral, mouse: LD50 = 567 mg/kg;
Oral, rat: LD50 = 7400 mg/kg;

Skin, rabbit: LD50 = 10 mL/kg;
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CAS# 811-49-4:
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Carcinogenicity:
CAS# 142-96-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 811-49-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Pseudomonas putida:

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	LITHIUM ALKYLS	LITHIUM ALKYLS
Hazard Class:	4.2	4.2
UN Number:	UN2445	UN2445
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 142-96-1 is listed on the TSCA inventory.
CAS# 811-49-4 is not listed on the TSCA inventory. It is for research and development use only.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 142-96-1: immediate, fire, reactive.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 142-96-1 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.
CAS# 811-49-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

F C

Risk Phrases:

R 10 Flammable.
R 14/15 Reacts violently with water liberating extremely flammable gases.
R 17 Spontaneously flammable in air.
R 34 Causes burns.
R 35 Causes severe burns.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face pr otection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 6A Keep under nitrogen.
S 43B In case of fire, use fire-fighting equipment on basis of sodiu m chloride, sodium bicarbonate (never use water).

WGK (Water Danger/Protection)

CAS# 142-96-1: 2
CAS# 811-49-4: No information available.

Canada - DSL/NDSL

CAS# 142-96-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, F, E.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 9/20/2004
Revision #3 Date: 3/18/2005