Material Safety Data Sheet
Triethylaluminium, 0.6M solution in heptane

ACC# 10060

Section 1 - Chemical Product and Company Identification

MSDS Name: Triethylaluminium, 0.6M solution in heptane
Catalog Numbers: AC381170000, AC381171000, AC381178000
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
142-82-5	Heptane (n-)	90%	205-563-8
97-93-8	Triethylaluminum	10%	202-619-3

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid.
Danger! Highly flammable. Reacts violently with water liberating highly flammable gases. Water-reactive. Causes burns by all exposure routes. Breathing vapors may cause drowsiness and dizziness. Harmful if swallowed, inhaled, or absorbed through the skin. Pyrophoric. Spontaneously flammable in air. Aspiration hazard if swallowed. Can enter lungs and cause damage. Air sensitive. Dangerous for the environment.
Target Organs: Central nervous system, lungs, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye burns.
Skin: Harmful if absorbed through the skin. Causes skin burns. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis.
Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May cause lung damage.
Inhalation: Harmful if inhaled. Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes chemical burns to the respiratory tract. Inhalation of vapors may cause drowsiness and dizziness.
Chronic: Prolonged or repeated skin contact may cause dermatitis.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Do not induce vomiting. Get medical aid immediately. Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
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: 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. 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.
Extinguishing Media: Use foam, dry chemical, or carbon dioxide. DO NOT USE WATER! Contact professional fire-fighters immediately.
Flash Point: Not available.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 2; Special Hazard: -W-

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. Do not expose spill to water. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: 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. 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. Store in a tightly closed container. Flammables-area. Water free area. Store under nitrogen.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Heptane (n-)	400 ppm TWA; 500 ppm STEL	85 ppm TWA; 350 mg/m3 TWA 750 ppm IDLH	500 ppm TWA; 2000 mg/m3 TWA
Triethylaluminum	2 mg/m3 TWA (as Al) (listed under Aluminum, soluble salts).	2 mg/m3 TWA (as Al) (listed under Aluminum, soluble salts).	none listed

OSHA Vacated PELs: Heptane (n-): 400 ppm TWA; 1600 mg/m3 TWA Triethylaluminum: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical splash goggles and face shield.
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: Liquid
Appearance: clear, colorless
Odor: Not available.
pH: Not available.
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: Reacts.
Specific Gravity/Density: Not available.
Molecular Formula:C6H15Al
Molecular Weight:114.17

Section 10 - Stability and Reactivity

Chemical Stability: Air sensitive. Reacts violently with water.
Conditions to Avoid: Incompatible materials, ignition sources, exposure to air, excess heat, exposure to moist air or water, confined spaces.
Incompatibilities with Other Materials: Strong oxidizing agents, acids, alcohols, organic halides.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, aluminum fumes.
Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:
CAS# 142-82-5: MI7700000
CAS# 97-93-8: BD2050000
LD50/LC50:
CAS# 142-82-5:

Inhalation, rat: LC50 = 103 gm/m3/4H;
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CAS# 97-93-8:
Inhalation, rat: LC50 = 10 gm/m3/15M;
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Carcinogenicity:
CAS# 142-82-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 97-93-8: 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: Goldfish: LC50 = 4.0 mg/L; 24 Hr.; UnspecifiedFish: Mosquito Fish: LC50 = 4900 mg/L; 24 Hr.; UnspecifiedFish: LC50 = 4900 mg/L; 24 Hr.; Unspecified No data available.
Environmental: Photolysis or hydrolysis of n-heptane are not expected to be important in soils. The biodegradation of n-heptane may occur in soils; however, volatilization and adsorption are expected to be far more important fate processes.
Physical: Based on a vapor pressure of 45.8 mm Hg at 25 deg C, n-heptane is expected to exist entirely in the vapor phase in ambient air. Direct photolysis of n-heptane in the atmosphere is not expected to be important.
Other: No information available.

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:	ALUMINUM ALKYLS (Triethylaluminium, Heptane)	ALUMINUM ALKYLS (Triethylaluminium, Heptane)
Hazard Class:	4.2	4.2
UN Number:	UN3051	UN3051
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 142-82-5 is listed on the TSCA inventory.
CAS# 97-93-8 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
CAS# 142-82-5: Testing required by manufacturers, processors
Section 12b
CAS# 142-82-5: Section 4
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 # 142-82-5: immediate, delayed, fire.
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# 142-82-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 97-93-8 can be found on the following state right to know lists: California, (listed as Aluminum, soluble salts), New Jersey, Pennsylvania, Minnesota, (listed as Aluminum, soluble salts), Massachusetts.

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 N

Risk Phrases:

R 11 Highly flammable.
R 14 Reacts violently with water.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 34 Causes burns.
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 65 Harmful: may cause lung damage if swallowed.
R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
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 43A In case of fire, use dry chemical (never use water).
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 142-82-5: 1
CAS# 97-93-8: 0

Canada - DSL/NDSL

CAS# 142-82-5 is listed on Canada's DSL List.
CAS# 97-93-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E, B6, D1B.

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

CAS# 142-82-5 is listed on the Canadian Ingredient Disclosure List.
CAS# 97-93-8 (listed as Aluminum, soluble salts) is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/20/2004
Revision #1 Date: 12/06/2005