Material Safety Data Sheet
Diethylaluminum chloride, 1M solution in hexanes

ACC# 20738

Section 1 - Chemical Product and Company Identification

MSDS Name: Diethylaluminum chloride, 1M solution in hexanes
Catalog Numbers: AC199520000, AC199521000, AC199528000
Synonyms: DEAC in hexanes.
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
110-54-3	Hexane	87.95	203-777-6
96-10-6	Diethylaluminum chloride	12.05	202-477-2

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: -22 deg C.
Danger! Reacts violently and/or explosively with water, steam or moisture. Extremely flammable liquid and vapor. Vapor may cause flash fire. Causes burns by all exposure routes. Pyrophoric. Spontaneously flammable in air. May cause central nervous system depression.
Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes eye burns.
Skin: Causes skin burns.
Ingestion: May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause central nervous system depression.
Inhalation: Causes chemical burns to the respiratory tract. Exposure produces central nervous system depression. May cause drowsiness, unconsciousness, and central nervous system depression. Vapors may cause dizziness or suffocation.
Chronic: Repeated exposure may cause nervous system abnormalities with muscle weakness and damage, motor incoordination, and sensation disturbances.

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. Destroy contaminated shoes.
Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.
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 may form an explosive mixture with air. May burn with invisible flame. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Water Reactive. Material will react with water and may release a flammable and/or toxic gas. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Spontaneously ignitable in air. May ignite or explode on contact with steam or moist air.
Extinguishing Media: Use dry sand or earth to smother fire. For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Do NOT use water directly on fire. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. Contact professional fire-fighters immediately.
Flash Point: -22 deg C (-7.60 deg F)
Autoignition Temperature: Not available.
Explosion Limits, Lower:1.2
Upper: 7.7
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. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. 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. Do not use combustible materials such as paper towels to clean up spill. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. 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. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Use with adequate ventilation. Handle under an inert atmosphere. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep from contact with moist air and steam.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry place. Keep container closed when not in use. Keep away from water. Flammables-area. Keep containers tightly closed. Do not expose to air. Store under an inert atmosphere.

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. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Hexane	50 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute	50 ppm TWA; 180 mg/m3 TWA 1100 ppm IDLH	500 ppm TWA; 1800 mg/m3 TWA
Diethylaluminum chloride	none listed	none listed	none listed

OSHA Vacated PELs: Hexane: 50 ppm TWA; 180 mg/m3 TWA Diethylaluminum chloride: 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 gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
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: colorless
Odor: benzene-like
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: 4.2
Evaporation Rate:0.3 (butyl acetate=1)
Viscosity: Not available.
Boiling Point: 69 deg C
Freezing/Melting Point:-95 deg C
Decomposition Temperature: Not available.
Solubility: reacts
Specific Gravity/Density:.7110g/cm3
Molecular Formula:C4H10AlCl
Molecular Weight:120.56

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Powder or liquid is pyrophoric. Combines vigorously or explosively with water.
Conditions to Avoid: Incompatible materials, ignition sources, dust generation, exposure to air, excess heat, strong oxidants, exposure to moist air or water.
Incompatibilities with Other Materials: Acids, bases, strong acids, strong bases, strong oxidizing agents, strong reducing agents.
Hazardous Decomposition Products: Hydrogen chloride, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, aluminum oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 110-54-3: MN9275000
CAS# 96-10-6: BD0558000
LD50/LC50:
CAS# 110-54-3:
Draize test, rabbit, eye: 10 mg Mild;
Inhalation, mouse: LC50 = 150000 mg/m3/2H;
Inhalation, rat: LC50 = 48000 ppm/4H;
Inhalation, rat: LC50 = 627000 mg/m3/3M;
Oral, rat: LD50 = 25 gm/kg;
.

CAS# 96-10-6:
Inhalation, rat: LC50 = 11 gm/m3;
.

Carcinogenicity:
CAS# 110-54-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 96-10-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. Cas# 110-54-3:LC50(96Hr.) Rainbow Trout = 4.14 mg/L; Flow-through BioassayLC50(96Hr.)Fathead Minnow=5.10 mg/LLC50(96Hr.)Bluegill = 4.12 mg/LLC50 (48Hr.) Water Flea = 3.87 mg/L
Environmental: Based on its low boiling point, this chemical is expected to rapidly volatilize into the atmosphere.
Physical: Photolysis or hydrolysis of n-hexane in aquatic systems are not expected to be important. The log biodegradation of n-hexane may occur in aquatic environments; however, volatilization and adsorption are expected to be far more important fate processes.
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:	PYROPHORIC LIQUIDS, ORGANIC, N.O.S.	PYROPHORIC LIQUID ORGANIC NOS (DIETHYLALUMNIUNUM CHLORIDE)
Hazard Class:	4.2	4.2
UN Number:	UN2845	UN2845
Packing Group:	I	I

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 110-54-3 is listed on the TSCA inventory.
CAS# 96-10-6 is listed on the TSCA inventory.
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
CAS# 110-54-3: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 110-54-3: immediate, delayed, fire.
Section 313
This material contains Hexane (CAS# 110-54-3, 87.95%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 110-54-3 is listed as a hazardous air pollutant (HAP).

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:
CAS# 96-10-6 is considered highly hazardous by OSHA.
STATE
CAS# 110-54-3 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.
CAS# 96-10-6 can be found on the following state right to know lists: New Jersey, Pennsylvania, 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
Risk Phrases:
R 11 Highly flammable.
R 14 Reacts violently with water.
R 17 Spontaneously flammable in air.
R 35 Causes severe burns.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 33 Take precautionary measures against static discharges.
S 36/39 Wear suitable protective clothing and eye/face protection.
S 9 Keep container in a well-ventilated place.
S 50A Do not mix with acids.

WGK (Water Danger/Protection)
CAS# 110-54-3: 1
CAS# 96-10-6: 1
Canada - DSL/NDSL
CAS# 110-54-3 is listed on Canada's DSL List.
CAS# 96-10-6 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of E, B2, B6.
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# 110-54-3 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/03/1999
Revision #4 Date: 10/05/2004