

## SAFETY DATA SHEET

Creation Date 03-January-2005

Revision Date 24-December-2021

Revision Number 4

### 1. Identification

**Product Name** Ethylaluminium dichloride, 0.9M solution in heptane

**Cat No. :** AC185450000; AC185451000; AC185458000

**Synonyms** EADC

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

**Importer/Distributor**  
Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **Manufacturer**

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number** For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

<b>Flammable liquids</b>	Category 2	
<b>Substances/mixtures which, in contact with water, emit flammable gases</b>	Category 1	Gas(es) = Ethane
<b>Skin Corrosion/Irritation</b>	Category 1 A	
<b>Serious Eye Damage/Eye Irritation</b>	Category 1	
<b>Specific target organ toxicity (single exposure)</b>	Category 3	
Target Organs - Central nervous system (CNS).		
<b>Aspiration Toxicity</b>	Category 1	
<b>Physical Hazards Not Otherwise Classified</b>	Category 1	
Reacts violently with water		

#### Label Elements

**Signal Word**  
Danger

**Hazard Statements**

Highly flammable liquid and vapor  
 In contact with water releases flammable gases which may ignite spontaneously  
 Catches fire spontaneously if exposed to air  
 May be fatal if swallowed and enters airways  
 Causes severe skin burns and eye damage  
 May cause drowsiness and dizziness  
 Reacts violently with water

**Precautionary Statements****Prevention**

Do not allow contact with water  
 Keep container tightly closed  
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
 Do not allow contact with air  
 Handle under inert gas. Protect from moisture  
 Ground/bond container and receiving equipment  
 Use only non-sparking tools  
 Take precautionary measures against static discharges  
 Do not breathe dust/fumes/gas/mist/vapours/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Use only outdoors or in a well-ventilated area  
 Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF ON SKIN: Immerse in cool water/wrap in wet bandages  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER/doctor  
 Rinse mouth  
 Do NOT induce vomiting  
 Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages  
 Wash contaminated clothing before reuse  
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed  
 Store contents under inert gas  
 Store in a dry place. Store in a closed container

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Very toxic to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
n-Heptane	142-82-5	85
Ethylaluminium dichloride	563-43-9	15

## 4. First-aid measures

<b>Eye Contact</b>	Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.
<b>Inhalation</b>	Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required. Risk of serious damage to the lungs (by aspiration).
<b>Ingestion</b>	Do NOT induce vomiting. Call a physician immediately. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
<b>Most important symptoms/effects</b>	Difficulty in breathing. Causes burns by all exposure routes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Dry chemical, soda ash, lime or sand. approved class D extinguishers. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media</b>	Water
<b>Flash Point</b>	-4 °C
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

### Specific Hazards Arising from the Chemical

Flammable. Contact with water liberates toxic gas. Water reactive. Produce flammable gases on contact with water. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Do not allow run-off from fire-fighting to enter drains or water courses.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrocarbons. Burning produces obnoxious and toxic fumes. Hydrogen chloride gas. Ethane.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

**Health**  
3

**Flammability**  
4

**Instability**  
2

**Physical hazards**  
W

## 6. Accidental release measures

### Personal Precautions Environmental Precautions

Remove all sources of ignition. Take precautionary measures against static discharges. Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

### Methods for Containment and Clean Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not expose spill to water.

## 7. Handling and storage

### Handling

Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

### Storage.

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Keep from any possible contact with water. Corrosives area. Flammables area. Keep under nitrogen. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Acids. Alcohols. oxygen.

## 8. Exposure controls / personal protection

### Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
n-Heptane	TWA: 400 ppm TWA: 1640 mg/m <sup>3</sup> STEL: 500 ppm STEL: 2050 mg/m <sup>3</sup>	TWA: 400 ppm STEL: 500 ppm	TWA: 400 ppm STEL: 500 ppm	TWA: 400 ppm STEL: 500 ppm	TWA: 400 ppm STEL: 500 ppm	(Vacated) TWA: 400 ppm (Vacated) TWA: 1600 mg/m <sup>3</sup> (Vacated) STEL: 500 ppm (Vacated) STEL: 2000 mg/m <sup>3</sup> TWA: 500 ppm TWA: 2000 mg/m <sup>3</sup>	IDLH: 750 ppm TWA: 85 ppm TWA: 350 mg/m <sup>3</sup> Ceiling: 440 ppm Ceiling: 1800 mg/m <sup>3</sup>

#### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

### Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	Glove comments
Nitrile rubber Viton (R)	See manufacturers recommendations	-	Splash protection only

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the

supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

#### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified 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.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** low boiling organic solvent Type AX Brown conforming to EN371 or Organic gases and vapours filter Type A Brown conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

#### Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Irritating
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	No data available
Boiling Point/Range	No information available
Flash Point	-4 °C
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Specific Gravity	0.740
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	> 180°C
Viscosity	No information available

## 10. Stability and reactivity

Reactive Hazard	Yes
Stability	Reacts violently with water. Moisture sensitive. Air sensitive.
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Incompatible products. Exposure to moist air or water.
Incompatible Materials	Acids, Alcohols, oxygen
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrocarbons, Burning produces obnoxious and toxic fumes, Hydrogen chloride gas, Ethane

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information

##### Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

##### Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
n-Heptane	>2000 mg/kg (rat)	LD50 = 3000 mg/kg ( Rabbit )	LC50 > 73.5 mg/L ( Rat ) 4 h

**Toxicologically Synergistic Products** No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
n-Heptane	142-82-5	Not listed	Not listed	Not listed	Not listed	Not listed
Ethylaluminium dichloride	563-43-9	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Central nervous system (CNS)

**STOT - repeated exposure** None known

**Aspiration hazard** Category 1

**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting; Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

n-Heptane	Not listed	LC50: = 375.0 mg/L, 96h (Cichlid fish)	Not listed	EC50: >10 mg/L/24h
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**Persistence and Degradability** May persist

**Bioaccumulation/ Accumulation** No information available.

**Mobility** .

Component	log Pow
n-Heptane	4.66

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN3399  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE  
**Hazard Class** 4.3  
**Subsidiary Hazard Class** 3  
**Packing Group** I

#### TDG

**UN-No** UN3399  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE  
**Hazard Class** 4.3  
**Subsidiary Hazard Class** 3  
**Packing Group** I

#### IATA

**UN-No** UN3399  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE  
**Hazard Class** 4.3  
**Subsidiary Hazard Class** 3  
**Packing Group** I

#### IMDG/IMO

**UN-No** UN3399  
**Proper Shipping Name** ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE  
**Hazard Class** 4.3  
**Subsidiary Hazard Class** 3  
**Packing Group** I

### 15. Regulatory information

#### International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
n-Heptane	142-82-5	X	-	X	ACTIVE	205-563-8	-	-
Ethylaluminium dichloride	563-43-9	X	-	X	ACTIVE	209-248-6	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
n-Heptane	142-82-5	X	KE-18271	X	X	X	X	X	X
Ethylaluminium dichloride	563-43-9	X	KE-10127	X	X	X	X	X	X

#### Legend:

X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
 EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
 IECSC - Chinese Inventory of Existing Chemical Substances  
 KECL - Korean Existing and Evaluated Chemical Substances  
 ENCS - Japanese Existing and New Chemical Substances  
 AICS - Australian Inventory of Chemical Substances  
 PICCS - Philippines Inventory of Chemicals and Chemical Substances

### Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
n-Heptane	Part 4 Substance Part 5, Isomer Groups		

### Other International Regulations

#### Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
n-Heptane	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
n-Heptane	142-82-5	Listed	Not applicable	Not applicable	Not applicable
Ethylaluminium dichloride	563-43-9	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
n-Heptane	142-82-5	Not applicable	Not applicable	Not applicable	Not applicable
Ethylaluminium dichloride	563-43-9	Not applicable	Not applicable	Not applicable	Not applicable

## 16. Other information

**Prepared By** Regulatory Affairs  
 Thermo Fisher Scientific  
 Email: EMSDS.RA@thermofisher.com

**Creation Date** 03-January-2005  
**Revision Date** 24-December-2021  
**Print Date** 24-December-2021  
**Revision Summary** This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the



date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**