

1 Identification

Product identifier

Product name: Diethylaluminum ethoxide, 25% w/w in hexane

Stock number: 87625

CAS Number:

1586-92-1

EC number:

216-447-1

Index number:

601-037-00-0

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar

Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS02 Flame

Pyr. Liq. 1 H250 Catches fire spontaneously if exposed to air.



GHS08 Health hazard

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS05 GHS07 GHS08

Signal word

Danger

Hazard statements

H250 Catches fire spontaneously if exposed to air.

H314 Causes severe skin burns and eye damage.

H361 Suspected of damaging fertility or the unborn child.

H336 May cause drowsiness or dizziness.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P222 Do not allow contact with air.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P273 Avoid release to the environment.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/...

P370+P378 In case of fire: Use for extinction: Fire-extinguishing powder.

WHMIS classification

B2 - Flammable liquid

B6 - Reactive flammable material

D2A - Very toxic material causing other toxic effects

E - Corrosive material



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 4 Flammability = 4

REACTIVITY 3 Physical Hazard = 3

Product name: **Diethylaluminum ethoxide, 25% w/w in hexane**

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
1586-92-1 Diethylaluminum ethoxide, 25% w/w in hexane
Identification number(s):
EC number: 216-447-1
Index number: 601-037-00-0

4 First-aid measures

Description of first aid measures
General information Immediately remove any clothing soiled by the product.
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.
For safety reasons unsuitable extinguishing agents Water
Special hazards arising from the substance or mixture
Reacts violently with water.
Spontaneously flammable in air.
Contact with water releases a flammable alcohol.
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Metal oxide fume
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Keep away from ignition sources.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Prevention of secondary hazards: Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires:
Substance/product is self ignitable.
Keep ignition sources away.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Store away from strong bases.
Store away from air.
Store away from water/moisture.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
This product is air sensitive.
Protect from humidity and water.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

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USA

Product name: Diethylaluminum ethoxide, 25% w/w in hexane	
Specific end use(s) No further relevant information available.	
8 Exposure controls/personal protection	
Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.	
Control parameters Components with limit values that require monitoring at the workplace:	
Aluminum alkyls mg/m3 Belgium TWA 5 BC Canada TWA 2 Ireland TWA 2.5 Quebec Canada TWA 2 United Kingdom TWA 2	
n-Hexane ppm ACGIH TLV 50 (skin) Austria MAK 50 Belgium TWA 50 Denmark TWA 25 Finland TWA 50; 150-STEEL France VME 50 Germany MAK 50 Hungary TWA 100; 200-STEEL Japan OEL 40 (skin) Korea TLV 50 (skin) Netherlands MAC-TGG 25 Norway TWA 25 Poland TWA 100; 400-STEEL Russia TWA 40; 300-STEEL Sweden NGV 25; 50-KTV Switzerland MAK-W 50; 100-KZG-W United Kingdom TWA 20 USA PEL 500	
1586-92-1 Diethylaluminum ethoxide, 25% w/w in hexane (100.0%)	
REL (USA)	Long-term value: 2 mg/m ³ as Al
TLV (USA)	Long-term value: 1* mg/m ³ as Al;*as respirable fraction
Additional information: No data	
Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Penetration time of glove material (in minutes) Not determined Eye protection: Tightly sealed goggles Full face protection Body protection: Protective work clothing.	
9 Physical and chemical properties	
Information on basic physical and chemical properties General Information Appearance: Form: Liquid Color: Colorless Odor: Petrol-like Odor threshold: Not determined.	
pH-value:	Not determined.
Change in condition Melting point/Melting range: Not determined Boiling point/Boiling range: Not determined Sublimation temperature / start: Not determined	
Flash point: Flammability (solid, gaseous) Ignition temperature: Decomposition temperature: Auto igniting:	-22 °C (-8 °F) (n-hexane) Not determined. Not determined Not determined Spontaneously flammable in air.
Danger of explosion: Explosion limits: Lower: Upper: Vapor pressure: Density at 20 °C (68 °F): Relative density Vapor density	Product is not explosive. However, formation of explosive air/vapor mixtures is possible. Not determined Not determined Not determined 0.85 g/cm ³ (7.093 lbs/gal) Not determined. Not determined.

Product name: Diethylaluminum ethoxide, 25% w/w in hexane

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Evaporation rate	Not determined.
Solubility in / Miscibility with Water:	Contact with water releases a flammable alcohol. Reacts violently
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity
Reacts violently with water.
Catches fire spontaneously if exposed to air.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Spontaneously flammable in air.
Reacts violently with water
Conditions to avoid No further relevant information available.
Incompatible materials:
Air
Bases
Water/moisture
Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Metal oxide fume

11 Toxicological information

Information on toxicological effects
Acute toxicity: Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: Suspected of damaging fertility or the unborn child.
Specific target organ system toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure.
Specific target organ system toxicity - single exposure:
May cause drowsiness or dizziness.
May cause respiratory irritation.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:
n-Hexane causes skin irritation, CNS effects, lung irritation, headache, dizziness, drowsiness, Repeated or prolonged exposure to the vapor can cause peripheral polyneuropathy. Symptoms include incoordination, slowed reaction time, blurred vision, slurred speech, facial numbness, loss of sensation. Gradual recovery is normally found after removal from exposure. Also causes reproductive effects in laboratory animals.
Aluminum may be implicated in Alzheimers disease. Inhalation of aluminum containing dusts may cause pulmonary disease.
Subacute to chronic toxicity: No effects known.
Subacute to chronic toxicity:
Ethyl alcohol, if formed, is a central nervous system depressant. Ingestion leads to drowsiness, lassitude, loss of appetite and inability to concentrate.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Toxic for aquatic organisms
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Toxic for aquatic organisms
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic to aquatic life.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.









14 Transport information

UN-Number DOT, IMDG, IATA	UN3394
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USA

Product name: Diethylaluminum ethoxide, 25% w/w in hexane

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UN proper shipping name DOT IMDG IATA	Organometallic substance, liquid, pyrophoric, water-reactive (Diethylaluminum ethoxide/hexane solution) ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER- REACTIVE (Diethylaluminum ethoxide/hexane solution), MARINE POLLUTANT ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER- REACTIVE (Diethylaluminum ethoxide/hexane solution)
Transport hazard class(es) DOT    Class Label Class Label IMDG    Class Label IATA   Class Label	4.2 Substances liable to spontaneous combustion. 4.2+4.3 4.2 (SW) Substances liable to spontaneous combustion 4.2+4.3 4.2 Substances liable to spontaneous combustion. 4.2+4.3 4.2 Substances liable to spontaneous combustion. 4.2+4.3
Packing group DOT, IMDG, IATA	I
Environmental hazards: Marine pollutant (IMDG):	Environmentally hazardous substance, liquid; Marine Pollutant Symbol (fish and tree)
Special precautions for user EMS Number:	Warning: Substances liable to spontaneous combustion F-G, S-M
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information: DOT Marine Pollutant (DOT): Remarks: UN "Model Regulation":	No Special marking with the symbol (fish and tree). UN3394, Organometallic substance, liquid, pyrophoric, water-reactive (Diethylaluminum ethoxide/hexane solution), 4.2 (4.3), I

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms



GHS02 GHS05 GHS07 GHS08
Signal word Danger
Hazard statements
H250 Catches fire spontaneously if exposed to air.
H314 Causes severe skin burns and eye damage.
H361 Suspected of damaging fertility or the unborn child.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
P222 Do not allow contact with air.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P273 Avoid release to the environment.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor/...
P370+P378 In case of fire: Use for extinction: Fire-extinguishing powder.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).
SARA Section 313 (specific toxic chemical listings) Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use: For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Product name: Diethylaluminum ethoxide, 25% w/w in hexane

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16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/23/2015 / -
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

USA