

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Revision Date 09-Feb-2024

Revision Number 10

# SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Cat No. : Molecular Formula Triethylaluminium, 1.3M solution in heptane 377290000; 377291000; 377298000 C6 H15 Al

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

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

Company

**UK entity/business name** Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

**EU entity/business name** Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **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

# **SECTION 2: HAZARDS IDENTIFICATION**

### 2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and L	JK SI 2020/1567
Physical hazards	
Flammable liquids Substances/mixtures which, in contact with water, emit flammable gases Pyrophoric liquids	Category 2 (H225) Category 1 (H260) Category 1 (H250)
Health hazards	
Aspiration Toxicity	Category 1 (H304)

#### Triethylaluminium, 1.3M solution in heptane

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Skin Corrosion/Irritation
Serious Eye Damage/Eye Irritation
Specific target organ toxicity - (single exposure)

#### **Environmental hazards**

Acute aquatic toxicity Chronic aquatic toxicity Category 1 B (H314) Category 1 (H318) Category 3 (H336)

Category 1 (H400) Category 1 (H410)

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

- H225 Highly flammable liquid and vapor
- H250 Catches fire spontaneously if exposed to air
- H260 In contact with water releases flammable gases which may ignite spontaneously
- H304 May be fatal if swallowed and enters airways
- H314 Causes severe skin burns and eye damage
- H336 May cause drowsiness or dizziness
- H410 Very toxic to aquatic life with long lasting effects
- EUH014 Reacts violently with water

#### **Precautionary Statements**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P231 + P232 - Handle and store contents under inert gas. Protect from moisture

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower 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 or doctor/physician

#### 2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
n-Heptane	142-82-5	EEC No. 205-563-8	80	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336)

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				Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Triethylaluminum	97-93-8	EEC No. 202-619-3	20	Skin Corr. 1B (H314) Eye Dam. 1 (H318) Pyr. Liq. 1 (H250) Water-react. 1 (H260)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
n-Heptane	-	1	-

Components	Reach Registration Number	
Triethylaluminum	01-2119424907-33	

#### Full text of Hazard Statements: see section 16

# **SECTION 4: FIRST AID MEASURES**

#### 4.1. Description of first aid measures

Eye Contact       Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.         Skin Contact       Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.         Ingestion       Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.         Inhalation       Remove from exposure, lie down. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately. Risk of serious damage to the lungs (by aspiration).         Self-Protection of the First Aider       Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.         4.2. Most important symptoms and effects, both acute and delayed.       Causes burns by all exposure routes. Difficulty in breathing. 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting         4.3. Indication of any immediate wetcal at	General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Ingestion       Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.         Inhalation       Remove from exposure, lie down. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately. Risk of serious damage to the lungs (by aspiration).         Self-Protection of the First Aider       Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.         4.2. Most important symptoms and effects, both acute and delayed       Causes burns by all exposure routes. Difficulty in breathing Product is a corrosive material. Use of gastric lavage or pensis 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting         4.3. Indication of any immediate medical attention and special treatment needed_	Eye Contact	
unconscious person. Clean mouth with water. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.         Inhalation       Remove from exposure, lie down. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately. Risk of serious damage to the lungs (by aspiration).         Self-Protection of the First Aider       Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.         4.2. Most important symptoms and effects, both acute and delayed_       Causes burns by all exposure routes. Difficulty in breathing 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting         4.3. Indication of any immediate medical attention and special treatment needed_	Skin Contact	contaminated clothing and gloves, including the inside, before re-use. Call a physician
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Notes to Physician Treat symptomatically.	4.3. Indication of any immediate me	edical attention and special treatment needed
	Notes to Physician	Treat symptomatically.

# **SECTION 5: FIREFIGHTING MEASURES**

#### Triethylaluminium, 1.3M solution in heptane

#### Suitable Extinguishing Media

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

# Extinguishing media which must not be used for safety reasons Water.

#### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Reacts violently with water. Flammable. 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>), Thermal decomposition can lead to release of irritating gases and vapors, Ethane.

#### 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

#### 6.2. Environmental precautions

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.

#### 6.3. Methods and material for containment and cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material. Do not expose spill to water. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. 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.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

#### 7.2. Conditions for safe storage, including any incompatibilities

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from water or moist air. Keep away from heat, sparks and flame.

Storage Class (LGK) (Germany)

#### 7.3. Specific end use(s)

Use in laboratories

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control parameters

#### Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
n-Heptane	STEL: 1500 ppm 15 min	TWA: 500 ppm (8h)	TWA: 500 ppm 8 hr.
	STEL: 6255 mg/m <sup>3</sup> 15 min	TWA: 2085 mg/m <sup>3</sup> (8h)	TWA: 2085 mg/m <sup>3</sup> 8 hr.
	TWA: 500 ppm 8 hr		STEL: 1500 ppm 15 min
	TWA: 2085 mg/m <sup>3</sup> 8 hr		STEL: 6255 mg/m <sup>3</sup> 15 min
Triethylaluminum	STEL: 6 mg/m <sup>3</sup> 15 min		
	TWA: 2 mg/m <sup>3</sup> 8 hr		

#### **Biological limit values**

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

### Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local	Acute effects	Chronic effects local	Chronic effects
	(Dermal)	systemic (Dermal)	(Dermal)	systemic (Dermal)
n-Heptane 142-82-5 ( 80 )				DNEL = 300mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
n-Heptane 142-82-5 ( 80 )				DNEL = 2085mg/m <sup>3</sup>
Triethylaluminum 97-93-8 ( 20 )				DNEL = 3.59mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

No information available.

#### 8.2. Exposure controls

#### **Engineering Measures**

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

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

Obygics	Personal protective equipment Eye Protection Goggles (European standard - EN 166)				
Protectiv	e gloves				
reakthrough time Gee manufacturers recommendations	Glove thickness -	EU standard EN 374	Glove comments (minimum requirement)		
5	reakthrough time ee manufacturers ecommendations	ecommendations	reakthrough time Glove thickness EU standard ee manufacturers - EN 374 ecommendations		

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, 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.

Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced <b>Recommended Filter type:</b> Organic gases and vapours filter Type A Brown conforming to EN14387
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. <b>Recommended half mask:-</b> Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 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.

# **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

#### 9.1. Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	No information available
Odor Threshold	No data available
Melting Point/Range	-93 °C / -135.4 °F
Softening Point	No data available
Boiling Point/Range	No information available
Flammability (liquid)	Highly flammable
Flammability (solid,gas)	Not applicable
Explosion Limits	No data available
Flash Point	-4 °C / 24.8 °F
Autoignition Temperature	No data available
Decomposition Temperature	> 180°C
pH	No information available
Viscosity	No data available
Water Solubility	reacts
Solubility in other solvents	No information available
Partition Coefficient (n-octanol/water	er)

Estimated Liquid

Method - (based on components)

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Component	log Pow	
n-Heptane	4.66	
Vapor Pressure	No data available	
Density / Specific Gravity	0.730	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	
9.2. Other information Molecular Formula Molecular Weight Explosive Properties Substances/mixtures which, in contact with water, emit flammable gases	C6 H15 AI 114.17 Vapors may form explosive mixtures Emitted gas ignites spontaneously Gas(es) = Ethane	with air

# **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity	Yes
10.2. Chemical stability	Stable under recommended storage conditions. Reacts violently with water, liberating extremely flammable gases. Pyrophoric: Spontaneously flammable in air. Air sensitive. Moisture sensitive.
10.3. Possibility of hazardous react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing. Reacts violently with water.
10.4. Conditions to avoid	Incompatible products. Excess heat. Exposure to moist air or water. Exposure to moisture. Keep away from open flames, hot surfaces and sources of ignition.
10.5. Incompatible materials	Water. Acids. Strong oxidizing agents. Alcohols. oxygen.

### 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Thermal decomposition can lead to release of irritating gases and vapors. Ethane.

# SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### **Product Information**

(a) acute toxicity; Oral

Dermal Inhalation Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met Based on available data, the classification criteria are not met

### Toxicology data for the components

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
Triethylaluminum	-	-	LC50 = 10 g/m <sup>3</sup> (Rat) 15 min

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(h) STOT-single exposure;       Category 3         Results / Target organs       Central nervous system (CNS).         (i) STOT-repeated exposure;       No data available         Target Organs       No information available.         (j) aspiration hazard;       Category 1         Other Adverse Effects       See actual entry in RTECS for complete information         Symptoms / effects,both acute and       Product is a corrosive material. Use of gastric lavage or emesis is con	
(c) serious eye damage/irritation;       Category 1         (d) respiratory or skin sensitization;       No data available         Respiratory       No data available         (e) germ cell mutagenicity;       No data available         (f) carcinogenicity;       No data available         (f) carcinogenicity;       No data available         (g) reproductive toxicity;       No data available         (h) STOT-single exposure;       Category 3         Results / Target organs       Central nervous system (CNS).         (i) STOT-repeated exposure;       No data available         Target Organs       No information available.         (j) aspiration hazard;       Category 1         Other Adverse Effects       See actual entry in RTECS for complete information         Symptoms / effects,both acute and delayed       Product is a corrosive material. Use of gastric lavage or emesis is con	
(d) respiratory or skin sensitization; Respiratory Skin       No data available No data available         (e) germ cell mutagenicity;       No data available         (f) carcinogenicity;       No data available         (f) carcinogenicity;       No data available         (g) reproductive toxicity;       No data available         (h) STOT-single exposure;       Category 3         Results / Target organs       Central nervous system (CNS).         (i) STOT-repeated exposure;       No data available         Target Organs       No information available.         (j) aspiration hazard;       Category 1         Other Adverse Effects       See actual entry in RTECS for complete information         Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is con Possible perforation of stomach or esophagus should be investigated.	
Respiratory SkinNo data available No data available(e) germ cell mutagenicity;No data available(f) carcinogenicity;No data available There are no known carcinogenic chemicals in this product(g) reproductive toxicity;No data available(h) STOT-single exposure;Category 3 Central nervous system (CNS).(i) STOT-repeated exposure;No data availableTarget OrgansNo information available.(j) aspiration hazard;Category 1Other Adverse EffectsSee actual entry in RTECS for complete information Possible perforation of stomach or esophagus should be investigated.	
(f) carcinogenicity;       No data available         There are no known carcinogenic chemicals in this product         (g) reproductive toxicity;       No data available         (h) STOT-single exposure;       Category 3         Results / Target organs       Central nervous system (CNS).         (i) STOT-repeated exposure;       No data available         Target Organs       No information available.         (j) aspiration hazard;       Category 1         Other Adverse Effects       See actual entry in RTECS for complete information         Symptoms / effects,both acute and delayed       Product is a corrosive material. Use of gastric lavage or emesis is con Possible perforation of stomach or esophagus should be investigated.	
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Results / Target organs       Central nervous system (CNS).         (i) STOT-repeated exposure;       No data available         Target Organs       No information available.         (j) aspiration hazard;       Category 1         Other Adverse Effects       See actual entry in RTECS for complete information         Symptoms / effects,both acute and delayed       Product is a corrosive material. Use of gastric lavage or emesis is con Possible perforation of stomach or esophagus should be investigated.	
<ul> <li>(i) STOT-repeated exposure; No data available</li> <li>Target Organs No information available.</li> <li>(j) aspiration hazard; Category 1</li> <li>Other Adverse Effects See actual entry in RTECS for complete information</li> <li>Symptoms / effects,both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is con Possible perforation of stomach or esophagus should be investigated.</li> </ul>	
Target OrgansNo information available.(j) aspiration hazard;Category 1Other Adverse EffectsSee actual entry in RTECS for complete informationSymptoms / effects,both acute and delayedProduct is a corrosive material. Use of gastric lavage or emesis is con Possible perforation of stomach or esophagus should be investigated.	
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Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is con delayed Possible perforation of stomach or esophagus should be investigated.	
delayed Possible perforation of stomach or esophagus should be investigated.	
of high vapor concentrations may cause symptoms like headache, dizz nausea and vomiting.	Ingestion causes erforation. Inhalation
11.2. Information on other hazards	
<b>Endocrine Disrupting Properties</b> Assess endocrine disrupting properties for human health. This product known or suspected endocrine disruptors.	does not contain an
SECTION 12: ECOLOGICAL INFORMATION	
12.1. Toxicity	

#### <u>12.1. Toxicity</u> Ecotoxicity effects

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 Fish	Water Flea	Freshwater Algae
n-Heptane	LC50: = 375.0 mg/L, 96h (Cichlid fish)	EC50: >10 mg/L/24h	

Component	Microtox	M-Factor
n-Heptane		1

<u>12.2. Persistence and degradability</u> Persistence Degradation in sewage treatment plant	Soluble in water, Persistence is unlikely, based Contains substances known to be hazardous to water treatment plants.	
12.3. Bioaccumulative potential	Bioaccumulation is unlikely	
Bioconcentration factor (BCF)	48	
Component	log Pow	Bioconcentration factor (BCF)
n-Heptane	4.66	No data available
<u>12.4. Mobility in soil</u> <u>12.5. Results of PBT and vPvB</u> assessment	The product is water soluble, and may spread in environment due to its water solubility. Highly m No data available for assessment.	
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or sus	spected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or sus This product does not contain any known or sus	•
SECTION 13: DISPOSAL CONSIDERATIONS		

#### 13.1. Waste treatment methods

Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

# **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

14.1. UN number 14.2. UN proper shipping name	UN3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
14.3. Transport hazard class(es)	4.2
Subsidiary Hazard Class	4.3
14.4. Packing group	Ι

Triethylaluminium, 1.3M solution in heptane

ADR

ADI	
<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> <u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	UN3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE 4.2 4.3 I
IATA_	FORBIDDEN FOR IATA TRANSPORT
<u>14.1. UN number</u> 14.2. UN proper shipping name	UN3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE, FORBIDDEN FOR IATA TRANSPORT
<u>14.3. Transport hazard class(es)</u> Subsidiary Hazard Class <u>14.4. Packing group</u>	4.2 4.3 I
14.5. Environmental hazards	Dangerous for the environment Product is a marine pollutant according to the criteria set by IMDG/IMO
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

# **SECTION 15: REGULATORY INFORMATION**

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

## International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
n-Heptane	142-82-5	205-563-8	-	-	Х	Х	KE-18271	Х	Х
Triethylaluminum	97-93-8	202-619-3	-	-	Х	Х	KE-34211	Х	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
n-Heptane	142-82-5	Х	ACTIVE	Х	-	Х	Х	Х
Triethylaluminum	97-93-8	Х	ACTIVE	Х	-	Х	Х	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

#### Authorisation/Restrictions according to EU REACH

Component	CAS No	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	142-82-5	-	Use restricted. See item 75. (see link for restriction details)	-
Triethylaluminum	97-93-8	-	Use restricted. See item 75. (see link for restriction details)	-

#### Seveso III Directive (2012/18/EC)

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
n-Heptane	142-82-5	Not applicable	Not applicable
Triethylaluminum	97-93-8	Not applicable	Not applicable

# Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

#### National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

#### WGK Classification

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
n-Heptane	WGK2	
Triethylaluminum	nwg	

Component	France - INRS (Tables of occupational diseases)
n-Heptane	Tableaux des maladies professionnelles (TMP) - RG 84

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
n-Heptane 142-82-5(80)	Prohibited and Restricted Substances	Group I	

#### 15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

### **SECTION 16: OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3

H225 - Highly flammable liquid and vapor

H250 - Catches fire spontaneously if exposed to air

H260 - In contact with water releases flammable gases which may ignite spontaneously

H304 - May be fatal if swallowed and enters airways

H314 - Causes severe skin burns and eye damage

H315 - Causes skin irritation

H336 - May cause drowsiness or dizziness

#### Triethylaluminium, 1.3M solution in heptane

#### Revision Date 09-Feb-2024

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H318 - Causes serious eye damage

#### Legend

CAS - Chemical Abstracts Service	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 PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	
WEL - Workplace Exposure Limit ACGIH - American Conference of Governmental Industrial Hygienists DNEL - Derived No Effect Level RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic	<ul> <li>TWA - Time Weighted Average</li> <li>IARC - International Agency for Research on Cancer</li> <li>Predicted No Effect Concentration (PNEC)</li> <li>LD50 - Lethal Dose 50%</li> <li>EC50 - Effective Concentration 50%</li> <li>POW - Partition coefficient Octanol:Water</li> <li>vPvB - very Persistent, very Bioaccumulative</li> </ul>
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code OECD - Organisation for Economic Co-operation and Development BCF - Bioconcentration factor Key literature references and sources for data https://echa.europa.eu/information-on-chemicals Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, F	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:Physical hazardsOn basis of test dataHealth HazardsCalculation methodEnvironmental hazardsCalculation method

#### **Training Advice**

Chemical incident response training.

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Revision Date	09-Feb-2024
Revision Summary	Not applicable.

# This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

#### 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 Safety Data Sheet