

Creation Date 01-Apr-2009

Revision Date 09-Feb-2024

Revision Number 13

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

1.1. Product identifier

Product Description: Lithium diisopropylamide, 2M solution in THF/n-heptane/ethylbenzene
Cat No. : 268830000; 268831000; 268838000
Synonyms LDA.THF complex

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 Pharmaceuticaaan 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 UK SI 2020/1567

Physical hazards

Flammable liquids Category 2 (H225)

Health hazards

Aspiration Toxicity Category 1 (H304)
 Acute oral toxicity Category 4 (H302)

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

Category 1 B (H314)
Category 1 (H318)
Category 2 (H351)
Category 3 (H335) (H336)
Category 2 (H373)

Environmental hazards

Chronic aquatic toxicity

Category 2 (H411)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor
H302 - Harmful if swallowed
H304 - May be fatal if swallowed and enters airways
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects
EUH014 - Reacts violently with water
EUH019 - May form explosive peroxides

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
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
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

2.3. Other hazards

Decomposes in contact with water

Toxic to terrestrial vertebrates

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
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				GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Diisopropylamine	108-18-9	203-558-5	3-5	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Acute Tox. 3 (H331) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT SE 3 (H335)
Naphtha (petroleum), hydrotreated light	64742-49-0	EEC No. 265-151-9	30-50	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336) Aquatic Chronic 2 (H411)
Tetrahydrofuran	109-99-9	203-726-8	20-25	Flam. Liq. 2 (H225) Acute Tox. 4 (H302) Eye Irrit. 2 (H319) STOT SE 3 (H335) STOT SE 3 (H336) Carc. 2 (H351) (EUH019)
2-Propanamine, N-(1-methylethyl)-, lithium salt	4111-54-0	EEC No. 223-893-0	20-30	Flam. Sol. 1 (H228) Pyr. Sol. 1 (H250) Skin Corr. 1B (H314) Eye Dam. 1 (H318) (EUH014)
Ethylbenzene	100-41-4	EEC No. 202-849-4	10-20	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Acute Tox. 4 (H332) STOT RE 2 (H373) Aquatic Chronic 3 (H412)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Diisopropylamine	STOT SE 3 (H335) :: C>=5%	-	-
Tetrahydrofuran	Acute Tox. 4 :: C>82.5% Eye Irrit. 2 :: C>=25% STOT SE 3 :: C>=25%	-	-

Components	Reach Registration Number	
Diisopropylamine	01-2119485846-20	
Tetrahydrofuran	01-2119444314-46	
Naphtha (petroleum), hydrotreated light	01-2119475515-33	
2-Propanamine, N-(1-methylethyl)-, lithium salt	01-2119917565-33	

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
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. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.

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Inhalation	If not breathing, give artificial respiration. Remove from exposure, lie down. 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. Symptoms of overexposure may be 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: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, 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.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Thermal decomposition can lead to release of irritating gases and vapors.

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

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. 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.

6.3. Methods and material for containment and cleaning up

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Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. 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

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

Keep away from heat, sparks and flame. Flammables area. Keep away from water or moist air. Store under an inert atmosphere. Shelf life 12 months. May form explosive peroxides on prolonged storage. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

Technical Rules for Hazardous Substances (TRGS) 510 Class 3
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
Diisopropylamine	STEL: 15 ppm 15 min STEL: 63 mg/m ³ 15 min TWA: 5 ppm 8 hr TWA: 21 mg/m ³ 8 hr		TWA: 5 ppm 8 hr. TWA: 20 mg/m ³ 8 hr. STEL: 15 ppm 15 min STEL: 60 mg/m ³ 15 min Skin
Tetrahydrofuran	STEL: 100 ppm 15 min STEL: 300 mg/m ³ 15 min TWA: 50 ppm 8 hr TWA: 150 mg/m ³ 8 hr Skin	TWA: 50 ppm (8h) TWA: 150 mg/m ³ (8h) STEL: 100 ppm (15min) STEL: 300 mg/m ³ (15min) Skin	TWA: 50 ppm 8 hr. TWA: 150 mg/m ³ 8 hr. STEL: 100 ppm 15 min STEL: 300 mg/m ³ 15 min Skin
Ethylbenzene	STEL: 125 ppm 15 min STEL: 552 mg/m ³ 15 min TWA: 100 ppm 8 hr TWA: 441 mg/m ³ 8 hr Skin	TWA: 100 ppm 8 hr TWA: 442 mg/m ³ 8 hr STEL: 200 ppm 15 min STEL: 884 mg/m ³ 15 min Possibility of significant	TWA: 100 ppm 8 hr. TWA: 442 mg/m ³ 8 hr. STEL: 200 ppm 15 min STEL: 884 mg/m ³ 15 min Skin

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		uptake through the skin	
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Biological limit values

List source(s):

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

See table for values

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Diisopropylamine 108-18-9 (3-5)			DNEL = 0.22mg/cm2	DNEL = 0.5mg/kg bw/day
Tetrahydrofuran 109-99-9 (20-25)				DNEL = 12.6mg/kg bw/day
Ethylbenzene 100-41-4 (10-20)				DNEL = 180mg/kg bw/day DNEL = 212mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Diisopropylamine 108-18-9 (3-5)	DNEL = 18mg/m ³	DNEL = 18mg/m ³	DNEL = 5mg/m ³	DNEL = 5mg/m ³
Naphtha (petroleum), hydrotreated light 64742-49-0 (30-50)	DNEL = 1066.67mg/m ³	DNEL = 1286.4mg/m ³	DNEL = 837.5mg/m ³	
Tetrahydrofuran 109-99-9 (20-25)	DNEL = 300mg/m ³	DNEL = 96mg/m ³	DNEL = 150mg/m ³	DNEL = 72.4mg/m ³
Ethylbenzene 100-41-4 (10-20)	DMEL = 884mg/m ³ DNEL = 293mg/m ³ DNEL = 442mg/m ³	DMEL = 884mg/m ³ DNEL = 442mg/m ³	DMEL = 442mg/m ³ DNEL = 221mg/m ³	DMEL = 442mg/m ³ DNEL = 77mg/m ³ DNEL = 221mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Diisopropylamine 108-18-9 (3-5)	PNEC = 0.5mg/L	PNEC = 5.1mg/kg sediment dw	PNEC = 0.2mg/L	PNEC = 28.6mg/L	PNEC = 0.56mg/kg soil dw
Tetrahydrofuran 109-99-9 (20-25)	PNEC = 4.32mg/L	PNEC = 23.3mg/kg sediment dw	PNEC = 21.6mg/L	PNEC = 4.6mg/L	PNEC = 2.13mg/kg soil dw
Ethylbenzene 100-41-4 (10-20)	PNEC = 0.327mg/L	PNEC = 12.46mg/kg sediment dw	PNEC = 0.327mg/L	PNEC = 6.58mg/L	PNEC = 2.31mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Diisopropylamine 108-18-9 (3-5)	PNEC = 0.05mg/L	PNEC = 0.51mg/kg sediment dw			
Tetrahydrofuran 109-99-9 (20-25)	PNEC = 0.432mg/L	PNEC = 2.33mg/kg sediment dw		PNEC = 67mg/kg food	
Ethylbenzene 100-41-4 (10-20)	PNEC = 0.327mg/L	PNEC = 12.46mg/kg sediment dw			

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations

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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 (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Viton (R)				
Neoprene gloves				

Skin and body protection Long sleeved clothing.

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 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.

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
Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371

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.
Recommended half mask:- 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Orange	
Odor	pungent	
Odor Threshold	No data available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	60 - 136 °C / 140 - 276.8 °F	@ 760 mmHg
Flammability (liquid)	Highly flammable	On basis of test data
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	2 °C / 35.6 °F	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	

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pH	No information available	
Viscosity	No data available	
Water Solubility	Decomposes in contact with water	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Diisopropylamine	1.4	
Tetrahydrofuran	0.45	
Ethylbenzene	3.118	
Vapor Pressure	No data available	
Density / Specific Gravity	0.81	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

9.2. Other information

Explosive Properties	Vapors may form explosive mixtures with air
Evaporation Rate	>1.0 (Butyl Acetate = 1.0)

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes Reacts violently with water

10.2. Chemical stability

Stable under normal conditions. Air sensitive. Moisture sensitive.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing. Reacts violently with water.

10.4. Conditions to avoid

Exposure to moist air or water. Exposure to moisture. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

(a) acute toxicity;

Oral	Category 4
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diisopropylamine	LD50 = 770 mg/kg (Rat)	LD50 = 2000 mg/kg (Rabbit)	LC50 = 5.35 mg/L (Rat) 4 h

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Naphtha (petroleum), hydrotreated light	LD50 > 5000 mg/kg (Rat)	LD50 > 3160 mg/kg (Rabbit)	LC50 = 73680 ppm (Rat) 4 h
Tetrahydrofuran	1650 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	180 mg/L (Rat) 1 h 53.9 mg/L (Rat) 4 h
Ethylbenzene	3500 mg/kg (Rat)	15400 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory

No data available

Skin

No data available

Component	Test method	Test species	Study result
Tetrahydrofuran 109-99-9 (20-25)	Local Lymph Node Assay OECD Test Guideline 429	mouse	non-sensitising

(e) germ cell mutagenicity; No data available

Component	Test method	Test species	Study result
Tetrahydrofuran 109-99-9 (20-25)	OECD Test Guideline 476 Gene cell mutation	in vivo Mammalian	negative
	OECD Test Guideline 473 Chromosomal aberration assay	in vitro Mammalian	negative

Mutagenic effects have occurred in microorganisms

(f) carcinogenicity; Category 2

The table below indicates whether each agency has listed any ingredient as a carcinogen
Limited evidence of a carcinogenic effect

Component	EU	UK	Germany	IARC
Naphtha (petroleum), hydrotreated light	Carc Cat. 1B			
Tetrahydrofuran				Group 2B
Ethylbenzene				Group 2B

(g) reproductive toxicity; No data available

Component	Test method	Test species / Duration	Study result
Tetrahydrofuran 109-99-9 (20-25)	OECD Test Guideline 416	Rat 2 Generation	NOAEL = 3,000 ppm

(h) STOT-single exposure; Category 3

Results / Target organs

Respiratory system, Central nervous system (CNS).

(i) STOT-repeated exposure; Category 2

Target Organs

Skin, Respiratory system, Eyes, Gastrointestinal tract (GI), Central nervous system (CNS), Liver, Kidney, spleen, Blood.

(j) aspiration hazard; Category 1

Other Adverse Effects

The toxicological properties have not been fully investigated.

Symptoms / effects, both acute and delayed

Symptoms of overexposure may be 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

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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. Causes central nervous system depression.

11.2. Information on other hazards

Endocrine Disrupting Properties

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

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. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Diisopropylamine	Brachydanio rerio: 150 - 223 mg/L LC50 96 h Oncorhynchus mykiss: 37 mg/L LC50 96 h Poecilia reticulata: 1000 mg/L LC50 96 h Oryzias latipes: 420 - 560 mg/L LC50 96 h	EC50 = 53 mg/L/24h Daphnia magna: EC50 = 25.8 mg/L/24h	EC50 = 20 mg/L/96h
Naphtha (petroleum), hydrotreated light	LC50: = 8.41 mg/L, 96h semi-static, closed (Oncorhynchus mykiss)		
Tetrahydrofuran	2160 mg/l LC50 = 96 h Pimephales promelas Leuciscus idus: LC50: 2820 mg/L/48h	EC50 48 h 3485 mg/l EC50: >10000 mg/L/24h	
Ethylbenzene	9.6 mg/L LC50 96 h 9.1 - 15.6 mg/L LC50 96 h 32 mg/L LC50 96 h 7.55 - 11 mg/L LC50 96 h 4.2 mg/L LC50 96 h 11.0 - 18.0 mg/L LC50 96 h	1.8 - 2.4 mg/L EC50 48 h	438 mg/L EC50 > 96 h 4.6 mg/L EC50 = 72 h 2.6 - 11.3 mg/L EC50 72 h 1.7 - 7.6 mg/L EC50 96 h

Component	Microtox	M-Factor
Ethylbenzene	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h	

12.2. Persistence and degradability

Persistence

Degradability

Degradation in sewage treatment plant

Persistence is unlikely, based on information available.

Decomposes in contact with water.

Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants. Decomposes in contact with water.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Diisopropylamine	1.4	No data available
Tetrahydrofuran	0.45	No data available
Ethylbenzene	3.118	15 dimensionless

12.4. Mobility in soil

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air.

12.5. Results of PBT and vPvB

Decomposes in contact with water.

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assessment

12.6. Endocrine disrupting properties

Endocrine Disruptor Information

Component	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances
Tetrahydrofuran	Group III Chemical	

12.7. Other adverse effects

Persistent Organic Pollutant

This product does not contain any known or suspected substance

Ozone Depletion Potential

This product does not contain any known or suspected substance

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

UN2924

14.2. UN proper shipping name

Flammable liquid, corrosive, n.o.s.

Technical Shipping Name

Naphtha (petroleum), hydrotreated light, 2-Propanamine, N-(1-methylethyl)-, lithium salt

14.3. Transport hazard class(es)

3

Subsidiary Hazard Class

8

14.4. Packing group

II

ADR

14.1. UN number

UN2924

14.2. UN proper shipping name

Flammable liquid, corrosive, n.o.s.

Technical Shipping Name

Naphtha (petroleum), hydrotreated light, 2-Propanamine, N-(1-methylethyl)-, lithium salt

14.3. Transport hazard class(es)

3

Subsidiary Hazard Class

8

14.4. Packing group

II

IATA

14.1. UN number

UN2924

14.2. UN proper shipping name

Flammable liquid, corrosive, n.o.s.

Technical Shipping Name

Naphtha (petroleum), hydrotreated light, 2-Propanamine, N-(1-methylethyl)-, lithium salt

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14.3. Transport hazard class(es) 3
Subsidiary Hazard Class 8
14.4. Packing group II

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
Diisopropylamine	108-18-9	203-558-5	-	-	X	X	KE-24105	X	X
Naphtha (petroleum), hydrotreated light	64742-49-0	265-151-9	-	-	X	X	KE-25623	-	-
Tetrahydrofuran	109-99-9	203-726-8	-	-	X	X	KE-33454	X	X
2-Propanamine, N-(1-methylethyl)-, lithium salt	4111-54-0	223-893-0	-	-	X	X	-	-	X
Ethylbenzene	100-41-4	202-849-4	-	-	X	X	X	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Diisopropylamine	108-18-9	X	ACTIVE	X	-	X	X	X
Naphtha (petroleum), hydrotreated light	64742-49-0	X	ACTIVE	X	-	X	X	X
Tetrahydrofuran	109-99-9	X	ACTIVE	X	-	X	X	X
2-Propanamine, N-(1-methylethyl)-, lithium salt	4111-54-0	X	ACTIVE	X	-	X	X	X
Ethylbenzene	100-41-4	X	ACTIVE	X	-	X	X	X

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)
Diisopropylamine	108-18-9	-	Use restricted. See item 75. (see link for restriction details)	-
Naphtha (petroleum), hydrotreated light	64742-49-0	-	Use restricted. See item 28. (see link for restriction details) Use restricted. See item 29. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-

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Tetrahydrofuran	109-99-9	-	Use restricted. See item 75. (see link for restriction details)	-
2-Propanamine, N-(1-methylethyl)-, lithium salt	4111-54-0	-	-	-
Ethylbenzene	100-41-4	-	-	-

REACH links

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

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
Diisopropylamine	108-18-9	Not applicable	Not applicable
Naphtha (petroleum), hydrotreated light	64742-49-0	Not applicable	Not applicable
Tetrahydrofuran	109-99-9	Not applicable	Not applicable
2-Propanamine, N-(1-methylethyl)-, lithium salt	4111-54-0	Not applicable	Not applicable
Ethylbenzene	100-41-4	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
Diisopropylamine	WGK2	
Naphtha (petroleum), hydrotreated light	WGK2	
Tetrahydrofuran	WGK1	
2-Propanamine, N-(1-methylethyl)-, lithium salt	WGK2	
Ethylbenzene	WGK 1	

Component	France - INRS (Tables of occupational diseases)
Diisopropylamine	Tableaux des maladies professionnelles (TMP) - RG 49,RG 49bis
Naphtha (petroleum), hydrotreated light	Tableaux des maladies professionnelles (TMP) - RG 84
Tetrahydrofuran	Tableaux des maladies professionnelles (TMP) - RG 84
Ethylbenzene	Tableaux des maladies professionnelles (TMP) - RG 84

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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
Tetrahydrofuran 109-99-9 (20-25)		Group I	
Ethylbenzene 100-41-4 (10-20)	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

H302 - Harmful if swallowed
 H304 - May be fatal if swallowed and enters airways
 H314 - Causes severe skin burns and eye damage
 H318 - Causes serious eye damage
 H335 - May cause respiratory irritation
 H336 - May cause drowsiness or dizziness
 H351 - Suspected of causing cancer
 H373 - May cause damage to organs through prolonged or repeated exposure
 H411 - Toxic to aquatic life with long lasting effects
 EUH014 - Reacts violently with water
 EUH019 - May form explosive peroxides
 H225 - Highly flammable liquid and vapor
 H228 - Flammable solid
 H250 - Catches fire spontaneously if exposed to air
 H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H331 - Toxic if inhaled
 H332 - Harmful if inhaled
 H412 - Harmful to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service

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

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

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

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer
Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

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, RTECS

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)

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Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation 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.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Creation Date	01-Apr-2009
Revision Date	09-Feb-2024
Revision Summary	SDS sections updated, 1.

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