

SAFETY DATA SHEET

Creation Date 16-Nov-2010 Revision Date 26-Oct-2022 Revision Number 9

1. Identification

Product Name Lithium bis(trimethylsilyl)amide, 1M solution in THF/Ethylbenzene

Cat No.: AC347700000; AC347701000; AC347708000

Synonyms 1,1,1,3,3,3-Hexamethyldisilazane lithium salt; Lithium hexamethyldisilazide

Recommended Use Laboratory chemicals.

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

Details of the supplier of the safety data sheet

Company

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

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410
Fair Lawn, NJ 07410

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

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids

Skin Corrosion/Irritation

Category 1

Serious Eye Damage/Eye Irritation

Carcinogenicity

Carcinogenicity

Specific target organ toxicity (single exposure)

Target Organs - Respiratory system, Central nervous system (CNS).

Aspiration Toxicity

Category 1

Category 1

Label Elements

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor May be fatal if swallowed and enters airways

Causes severe skin burns and eye damage May cause respiratory irritation May cause drowsiness or dizziness Suspected of causing cancer



Precautionary Statements

Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Keep cool

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

Eyes

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

Do NOT induce vomiting

Rinse mouth

Fire

In case of fire: Use limestone powder, sodium chloride or dry sand to extinguish

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Reacts violently with water

May form explosive peroxides

WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Tetrahydrofuran	109-99-9	65-80
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-,	4039-32-1	18-22

lithium salt		
Ethylbenzene	100-41-4	2.5-9

4. 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.

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).

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.

Most important symptoms and

effects

Causes burns by all exposure routes. 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: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: May cause central nervous

system depression

Treat symptomatically

Notes to Physician

5. Fire-fighting measures

Suitable Extinguishing Media Dry sodium chloride. Dry sand. Limestone powder.

Unsuitable Extinguishing Media Water, Foam, Carbon dioxide (CO2)

Flash Point -21 °C / -5.8 °F

Method - (based on components)

Autoignition Temperature

Explosion Limits

No information available

Upper No data available
Lower No data available

Sensitivity to Mechanical Impact No information available Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Reacts violently with water. Flammable. The product causes burns of eyes, skin and mucous membranes. 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

Trimethylsilane. Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO₂). Lithium oxide.

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health **Flammability** Instability Physical hazards

Accidental release measures

Personal Precautions

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. Do not flush into surface water or sanitary sewer system.

Environmental Precautions

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Methods for Containment and Clean 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.

7. Handling and storage

Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. 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.

Storage.

Store under an inert atmosphere. Keep away from water or moist air. Keep away from heat, sparks and flame. Shelf life: 6 months after opening. 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. Incompatible Materials. Acids. Water.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Tetrahydrofuran	TWA: 50 ppm	(Vacated) TWA: 200 ppm	IDLH: 2000 ppm	TWA: 200 ppm
	STEL: 100 ppm	(Vacated) TWA: 590 mg/m ³	TWA: 200 ppm	TWA: 590 mg/m ³
	Skin	(Vacated) STEL: 250 ppm	TWA: 590 mg/m ³	STEL: 250 ppm
		(Vacated) STEL: 735 mg/m ³	STEL: 250 ppm	STEL: 735 mg/m ³
		TWA: 200 ppm	STEL: 735 mg/m ³	_
		TWA: 590 mg/m ³		
Ethylbenzene	Ethylbenzene TWA: 20 ppm		IDLH: 800 ppm	TWA: 20 ppm
		(Vacated) TWA: 435 mg/m ³	TWA: 100 ppm	
		(Vacated) STEL: 125 ppm	TWA: 435 mg/m ³	
		(Vacated) STEL: 545 mg/m ³	STEL: 125 ppm	
		TWA: 100 ppm	STEL: 545 mg/m ³	
		TWA: 435 mg/m ³		

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations

and safety showers are close to the workstation location. Use explosion-proof

electrical/ventilating/lighting equipment.

Personal Protective Equipment

Eye/face Protection Tight sealing safety goggles. Face protection shield.

Skin and body protectionWear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection 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.

Recommended Filter type: Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State Liquid
Appearance Dark yellow

Odor No information available
Odor Threshold No information available

pH No information available

Melting Point/RangeNo data availableBoiling Point/RangeNo information availableFlash Point-21 °C / -5.8 °FMethod -(based on components)

Evaporation Rate

Flammability (solid,gas)

No information available
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 0.890

Solubility Decomposes in contact with water

Partition coefficient; n-octanol/waterNo data availableAutoignition TemperatureNo information availableDecomposition TemperatureNo information available

Viscosity No information available

10. Stability and reactivity

Reactive Hazard Yes

Stability Air sensitive, Moisture sensitive.

Conditions to Avoid Incompatible products. Excess heat. Keep away from open flames, hot surfaces and

sources of ignition. Exposure to air. Exposure to moist air or water. Exposure to moisture.

Incompatible Materials Acids, Water

Hazardous Decomposition Products Trimethylsilane, Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2),

Lithium oxide

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions

None under normal processing. Reacts violently with water.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. Category 4.

ATE = 300 - 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
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

Toxicologically Synergistic

Products

Hygienists)

No information available

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

Irritation Causes severe burns by all exposure routes

Sensitization No information available

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

Limited evidence of a carcinogenic effect.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Tetrahydrofuran	109-99-9	Group 2B	Not listed	A3	X	A3
Silanamine, 1,1,1-trimethyl-N-(trim		Not listed				
ethylsilyl)-, lithium salt						
Ethylbenzene	100-41-4	Group 2B	Not listed	A3	X	A3

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans Group 2B - Possibly Carcinogenic to Humans

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

ACGIH: (American Conference of Governmental Industrial

Mexico - Occupational Exposure Limits - Carcinogens

Reproductive Effects No information available.

Developmental EffectsNo information available.

Teratogenicity No information available.

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

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and 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: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: May cause central nervous system depression

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters	EU - Endocrine Disruptors -	Japan - Endocrine Disruptor	
	Candidate List	Evaluated Substances	Information	
Tetrahydrofuran	Tetrahydrofuran Group III Chemical		Not applicable	

Other Adverse Effects

The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Reacts violently with water.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Tetrahydrofuran	Not listed	2160 mg/l LC50 = 96 h Pimephales promelas Leuciscus idus: LC50: 2820 mg/L/48h	Not listed	EC50 48 h 3485 mg/l EC50: >10000 mg/L/24h
Ethylbenzene	EC50: 2.6 - 11.3 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: 1.7 - 7.6 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: > 438 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 4.6 mg/L, 72h (Pseudokirchneriella subcapitata)	LC50: 7.55 - 11 mg/L, 96h flow-through (Pimephales promelas) LC50: 11.0 - 18.0 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 4.2 mg/L, 96h semi-static (Oncorhynchus mykiss) LC50: = 32 mg/L, 96h static (Lepomis macrochirus) LC50: 9.1 - 15.6 mg/L, 96h static (Pimephales promelas) LC50: = 9.6 mg/L, 96h static (Poecilia reticulata)	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h	EC50: 1.8 - 2.4 mg/L, 48h (Daphnia magna)

Persistence and Degradability

Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation

No information available.

Mobility

Is not likely mobile in the environment.

Component	log Pow
Tetrahydrofuran	0.45
Ethylbenzene	3.6

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.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes		
Tetrahydrofuran - 109-99-9	U213	-		

14. Transport information

<u>DOT</u>

UN-No UN2924

Proper Shipping Name Alcohols,n.o.s., (Ethanol, Methanol)

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Technical Name Tetrahydrofuran, Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt

Hazard Class 3 Subsidiary Hazard Class 8 Packing Group II

TDG

UN-No UN2924

Proper Shipping Name Flammable liquid, corrosive, n.o.s.

Hazard Class 3 Subsidiary Hazard Class 8 Packing Group II

<u>IATA</u>

UN-No UN2924

Proper Shipping Name Flammable liquid, corrosive, n.o.s.

Hazard Class 3
Subsidiary Hazard Class 8
Packing Group ||

IMDG/IMO

UN-No UN2924

Proper Shipping Name Flammable liquid, corrosive, n.o.s.

Hazard Class 3 Subsidiary Hazard Class 8 Packing Group II

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification -	TSCA - EPA Regulatory
			Active-Inactive	Flags
Tetrahydrofuran	109-99-9	Χ	ACTIVE	-
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-,	4039-32-1	Х	ACTIVE	-
lithium salt				
Ethylbenzene	100-41-4	X	ACTIVE	-

Leaend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)

Not applicable

TSCA 12(b) - Notices of Export

Component	CAS No	TSCA 12(b) - Notices of Export
Tetrahydrofuran	109-99-9	Section 4, 1 % de minimus concentration

International Inventories

X = listed, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Tetrahydrofuran	109-99-9	Х	-	203-726-8	Χ	Х	Χ	Χ	Χ	KE-33454
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt	4039-32-1	-	Х	223-725-6	Х	Х	Х	-	-	-
Ethylbenzene	100-41-4	Х	-	202-849-4	Х	Х	Χ	Χ	Χ	KE-13532

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

U.S. Federal Regulations

SARA 313

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Ethylbenzene	100-41-4	2.5-9	0.1

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

	Component	Component CWA - Hazardous Substances		CWA - Toxic Pollutants	CWA - Priority Pollutants	
Г	Ethylbenzene	X	1000 lb	Х	X	

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Ethylbenzene	X		-

OSHA - Occupational Safety and

Health Administration

Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Tetrahydrofuran	1000 lb	-
Ethylbenzene	1000 lb	-

California Proposition 65

This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Tetrahydrofuran	109-99-9	Carcinogen	-	Carcinogen
Ethylbenzene	100-41-4	Carcinogen	54 μg/day 41 μg/day	Carcinogen

U.S. State Right-to-Know

Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Tetrahydrofuran	X	X	X	-	X
Ethylbenzene	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland

Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) -	REACH (1907/2006) -	REACH Regulation (EC
		Annex XIV - Substances	Annex XVII - Restrictions	1907/2006) article 59 -
		Subject to Authorization	on Certain Dangerous	Candidate List of

			Substances	Substances of Very High Concern (SVHC)
Tetrahydrofuran	109-99-9	-	Use restricted. See item 75. (see link for restriction details)	-
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt	4039-32-1	-	-	-
Ethylbenzene	100-41-4	-	-	-

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)
Tetrahydrofuran	109-99-9	Listed	Not applicable	Not applicable	Not applicable
Silanamine,	4039-32-1	Not applicable	Not applicable	Not applicable	Not applicable
1,1,1-trimethyl-N-(trimethylsilyl					
)-, lithium salt					
Ethylbenzene	100-41-4	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)
Tetrahydrofuran	109-99-9	Not applicable	Not applicable	Not applicable	Not applicable
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, lithium salt	4039-32-1	Not applicable	Not applicable	Not applicable	Not applicable
Ethylbenzene	100-41-4	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By Regulatory Affairs

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 Creation Date
 16-Nov-2010

 Revision Date
 26-Oct-2022

 Print Date
 26-Oct-2022

Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard

replacing the current legislation under 29 CFR 1910.1200 to align with the Globally

Harmonized System of Classification and Labeling of Chemicals (GHS).

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