

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

Product Identifier

Product Description:	Tetrahydrofuran, ACS, stab. with BHT
Cat No. :	S60318
Synonyms	THF
CAS No	109-99-9
Molecular Formula	C ₄ H ₈ O

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

Details of the supplier of the safety data sheet
Importer

Fisher Scientific Korea
 D5,D6, Incheon Airport Logistics Complex
 150, Gonghangdong-Ro 296 Beon-Gil
 Jung-Gu, Incheon
 Tel: +82-1661-9555
 Fax: +82-2-2023-0603

Supplier

Thermo Fisher Scientific Chemicals, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099

E-mail address	Chem.KR@thermofisher.com
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Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970
CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887
Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture
Physical hazards

Flammable liquids	Category 2
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Health hazards

Acute Oral Toxicity	Category 4
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity - (single exposure)	Category 3

Environmental hazards

Based on available data, the classification criteria are not met

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Label Elements



Signal Word

Danger

Hazard Statements

H225 - Highly flammable liquid and vapor

H302 - Harmful if swallowed

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H351 - Suspected of causing cancer if inhaled

Precautionary Statements

Prevention

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

P233 - Keep container tightly closed

P240 - Ground and bond container and receiving equipment

P241 - Use explosion-proof electrical/ ventilating/ lighting equipment

P242 - Use non-sparking tools

P243 - Take action to prevent static discharges

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

P264 - Wash hands and face thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

Response

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

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P330 - Rinse mouth

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

P337 + P313 - If eye irritation persists: Get medical advice/attention

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P312 - Call a POISON CENTER or doctor if you feel unwell

P308 + P313 - IF exposed or concerned: Get medical advice/attention

Storage

P403 + P235 - Store in a well-ventilated place. Keep cool

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

May form explosive peroxides

Toxic to terrestrial vertebrates

Contains a known or suspected endocrine disruptor

Contains a substance on the National Authorities Endocrine Disruptor Lists

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NFPA

Health
2

Flammability
3

Instability
1

Physical hazards
N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
Tetrahydrofuran	THF; butylene oxide; furanidine; oxolane	109-99-9	KE-33454	99 - 100
2,6-Di-tert-butyl-p-cresol	BHT; Butylated hydroxytoluene; DBPC; Ionol; 2,6-Di-tert-butyl-p-cresol	128-37-0	KE-03079	<0.1

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Advice

If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation

Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

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.

Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Causes central nervous system depression.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of

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ignition and flash back. May form explosive peroxides.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), peroxides.

Advice for fire-fighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin and eyes. Keep people away from and upwind of spill/leak.

Environmental precautions

Should not be released into the environment.

Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Avoid ingestion and inhalation. 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. If peroxide formation is suspected, do not open or move container. Handle under an inert atmosphere.

Conditions for Safe Storage, Including any Incompatibilities

Store under an inert atmosphere. Shelf life 30 months (Unopened) or Shelf life: 6 months after opening. Containers should be dated when opened. May form explosive peroxides on prolonged storage. 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. Keep away from heat, sparks and flame. Flammables area.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Tetrahydrofuran	109-99-9	STEL: 100 ppm TWA: 50 ppm Skin	TWA: 50 ppm STEL: 100 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 590 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 735 mg/m ³ TWA: 200 ppm

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				TWA: 590 mg/m ³
2,6-Di-tert-butyl-p-cresol	128-37-0	TWA: 2 mg/m ³	TWA: 2 mg/m ³	(Vacated) TWA: 10 mg/m ³

Component	CAS No	European Union	The United Kingdom	Germany
Tetrahydrofuran	109-99-9	TWA: 50 ppm (8h) TWA: 150 mg/m ³ (8h) STEL: 100 ppm (15min) STEL: 300 mg/m ³ (15min) Skin	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 (8 Stunden). AGW - exposure factor 2 TWA: 150 mg/m ³ (8 Stunden). AGW - exposure factor 2 TWA: 50 ppm (8 Stunden). MAK TWA: 150 mg/m ³ (8 Stunden). MAK Höhepunkt: 100 ppm Höhepunkt: 300 mg/m ³ Haut
2,6-Di-tert-butyl-p-cresol	128-37-0	Not listed	STEL: 30 mg/m ³ 15 min TWA: 10 mg/m ³ 8 hr	TWA: 10 mg/m ³ (8 Stunden). AGW - exposure factor 4 TWA: 10 mg/m ³ (8 Stunden). MAK can occur as vapor and aerosol at the same time Höhepunkt: 40 mg/m ³

ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
Tetrahydrofuran	109-99-9	2 mg/L Medium: urine Time: end of shift Determinant: Tetrahydrofuran
2,6-Di-tert-butyl-p-cresol	128-37-0	Not listed

Exposure Controls

Engineering Measures

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

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

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Protective gloves

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 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.

Personal protective equipment

Respiratory Protection

Use only those certified by the Korea Occupational Safety and Health Administration.

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

Recommended Filter type:

Organic gases and vapours filter Type A Brown conforming to EN14387

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

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

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Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.) Colorless Liquid

Odor

Petroleum distillates

Odor Threshold

No data available

pH

7-8

20% aq. solution

Melting Point/Range

-108.4 °C / -163.1 °F

Softening Point

No data available

Boiling Point/Range

66 °C / 150.8 °F

Flash Point

-21 °C / -5.8 °F

Method - No information available

Evaporation Rate

> 1 (Ether = 1.0)

(Butyl Acetate = 1.0)

Flammability (solid,gas)

Not applicable

Liquid

Explosion Limits

Lower 1.5 vol%

Upper 12 vol%

Vapor Pressure

170 mbar @ 20 °C

Vapor Density

2.5 (Ether = 1.0)

(Air = 1.0)

Specific Gravity / Density

0.880

Bulk Density

Not applicable

Liquid

Water Solubility

Miscible

Solubility in other solvents

No information available

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
Tetrahydrofuran	109-99-9	0.45
2,6-Di-tert-butyl-p-cresol	128-37-0	5.1

Autoignition Temperature

215 - °C / 419 - °F

Decomposition Temperature

No data available

Viscosity

0.456 mPas @ 20°C Dynamic

Explosive Properties

Vapors may form explosive mixtures with air

Oxidizing Properties

No information available

Molecular Formula

C4 H8 O

Molecular Weight

72.11

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Yes. May form explosive peroxides.

Chemical Stability

ALFAAS60318

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Stable under recommended storage conditions. Reacts with air to form peroxides. May form explosive peroxides on prolonged storage. Hygroscopic.

Possibility of Hazardous Reactions

Hazardous Polymerization
Hazardous Reactions

Hazardous polymerization may occur.
None under normal processing.

Conditions to Avoid

Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moist air or water.

Incompatible Materials

Strong oxidizing agents. Acids.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂). peroxides.

SECTION 11: TOXICOLOGICAL INFORMATION

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

Product Information

Information on expected route of exposure

Inhalation Irritating to respiratory system. May be harmful if inhaled. INHALATION MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS.
Ingestion Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Eyes Irritating to eyes.
Skin May be harmful in contact with skin. May cause irritation.

Information on Health Hazards

(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

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Tetrahydrofuran	109-99-9	1650 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	180 mg/L (Rat) 1 h 53.9 mg/L (Rat) 4 h
2,6-Di-tert-butyl-p-cresol	128-37-0	> 6 g/kg (Rat)	> 2 g/kg (Rat)	No data available

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory Based on available data, the classification criteria are not met
Skin Based on available data, the classification criteria are not met

Component	CAS No	Test method	Test species	Study result
Tetrahydrofuran	109-99-9	Local Lymph Node Assay OECD Test Guideline 429	mouse	non-sensitising

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2,6-Di-tert-butyl-p-cresol	128-37-0	No data available	No data available	No data available
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(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Component	CAS No	Test method	Test species	Study result
Tetrahydrofuran	109-99-9	OECD Test Guideline 476 Gene cell mutation	in vivo Mammalian	negative
		OECD Test Guideline 473 Chromosomal aberration assay	in vitro Mammalian	negative
2,6-Di-tert-butyl-p-cresol	128-37-0	No data available	No data available	No data available

(f) carcinogenicity; Category 2

Component	CAS No	Test method	Test species / Duration	Study result
Tetrahydrofuran	109-99-9	No data available	No data available	No data available
2,6-Di-tert-butyl-p-cresol	128-37-0	No data available	No data available	No data available

Limited evidence of a carcinogenic effect

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Tetrahydrofuran	109-99-9	Group 2B	Not listed	A3	X	Not listed
2,6-Di-tert-butyl-p-cresol	128-37-0	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

(g) reproductive toxicity; Based on available data, the classification criteria are not met

Component	CAS No	Test method	Test species / Duration	Study result
Tetrahydrofuran	109-99-9	OECD Test Guideline 416	Rat 2 Generation	NOAEL = 3,000 ppm
2,6-Di-tert-butyl-p-cresol	128-37-0	No data available	No data available	No data available

(h) STOT-single exposure; Category 3
Results / Target organs Respiratory system, Central nervous system (CNS).

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Test method OECD Test No. 407
Test species / Duration Rat / 28 days
Study result NOAEL = 1,000 mg/l
Route of exposure Oral
Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Other Adverse Effects
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Causes central nervous system depression.

Endocrine Disruptor Information

Component	CAS No	EU - Endocrine	EU - Endocrine	Japan - Endocrine
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		Disrupters Candidate List	Disruptors - Evaluated Substances	Disruptor Information
Tetrahydrofuran	109-99-9	Group III Chemical	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects

Do not empty into drains.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Tetrahydrofuran	109-99-9	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	No data available	No data available
2,6-Di-tert-butyl-p-cresol	128-37-0	LC50 = 0.199 mg/L 96h	EC50 >0.31 mg/L 48h	EC50 = 0.758 mg/L 96h EC50 = 6 mg/L 72 h	EC50 = 7.82 mg/L 5 min EC50 = 8.57 mg/L 15 min EC50 = 8.98 mg/L 30 min

Persistence and degradability

Persistence

Degradation in sewage treatment plant

Product is biodegradable

Persistence is unlikely, based on information available.

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Tetrahydrofuran	0.45	No data available
2,6-Di-tert-butyl-p-cresol	5.1	230 - 2500 dimensionless

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.

Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
Tetrahydrofuran	109-99-9	Not listed
2,6-Di-tert-butyl-p-cresol	128-37-0	Not listed

Other adverse effects

No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

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.

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.

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SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN2056
Proper Shipping Name TETRAHYDROFURAN
Hazard Class 3
Packing Group II

IATA

UN-No UN2056
Proper Shipping Name TETRAHYDROFURAN
Hazard Class 3
Packing Group II

IMDG/IMO

UN-No UN2056
Proper Shipping Name TETRAHYDROFURAN
Hazard Class 3
Packing Group II
Marine Pollutant No hazards identified

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

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

Legend: X - Listed '-' - Not Listed

International Inventories

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Tetrahydrofuran	109-99-9	KE-33454	X	203-726-8	X	X	-	X	X	X	X
2,6-Di-tert-butyl-p-cresol	128-37-0	KE-03079	X	204-881-4	X	X	-	X	X	X	X

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
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Tetrahydrofuran	109-99-9	Listed	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Listed	Not applicable	Not applicable

Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Tetrahydrofuran	109-99-9	Annex 1 - KE-33454	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Annex 1 - KE-03079	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted
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				Chemicals
Tetrahydrofuran	109-99-9	Not applicable	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Tetrahydrofuran	109-99-9	Not applicable	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Tetrahydrofuran	109-99-9	Not applicable	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Tetrahydrofuran	109-99-9	Listed	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Tetrahydrofuran	109-99-9	Listed	Listed	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Tetrahydrofuran	109-99-9	5000 kg	STEL: 100 ppm TWA: 50 ppm Skin	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	TWA: 2 mg/m ³	Not applicable

National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Tetrahydrofuran	109-99-9	Not applicable	Not applicable	Not applicable	2. Group 1 Petroleum (Soluble) 400 L	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
Tetrahydrofuran	109-99-9	STEL: 100 ppm TWA: 50 ppm Skin	2 mg/L Medium: urine Time: end of shift Determinant: Tetrahydrofuran
2,6-Di-tert-butyl-p-cresol	128-37-0	TWA: 2 mg/m ³	Not listed

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US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Tetrahydrofuran	109-99-9	Not applicable	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	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) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355)

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Tetrahydrofuran	109-99-9	Not applicable	1000 lb	Not applicable
2,6-Di-tert-butyl-p-cresol	128-37-0	Not applicable	Not applicable	Not applicable

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Danger.

H225 - Highly flammable liquid and vapor. H302 - Harmful if swallowed. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. H351 - Suspected of causing cancer. EUH019 - May form explosive peroxides.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 - Call a POISON CENTER or doctor if you feel unwell.

SECTION 16: OTHER INFORMATION

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/NDSL - 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

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

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

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)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

SAFETY DATA SHEET

Tetrahydrofuran, ACS, stab. with BHT

Revision Date 12-Jun-2024

Training Advice

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.

Chemical incident response training.

Prepared By	Health, Safety and Environmental Department
Creation Date	11-Jun-2009
Revision Date	12-Jun-2024
Revision Number	2
Revision Summary	New emergency telephone response service provider.

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

Disclaimer

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End of Safety Data Sheet