

SAFETY DATA SHEET

Creation Date 03-Aug-2010

Revision Date 19-Dec-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

| | |
|---|---|
| Product Name | Lithium diphenylphosphide, 0.5M solution in THF |
| Cat No. : | AC433620000, AC433621000 |
| Synonyms | No information available |
| Recommended Use Uses advised against | Laboratory chemicals. 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

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

2. Hazard(s) identification

Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

| | |
|---|--------------|
| Flammable liquids | Category 2 |
| Acute oral toxicity | Category 4 |
| Skin Corrosion/Irritation | Category 1 B |
| Serious Eye Damage/Eye Irritation | Category 1 |
| Carcinogenicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system, Central nervous system (CNS). | |

Label Elements

Signal Word

Danger

Hazard Statements

Highly flammable liquid and vapor
Harmful if swallowed
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
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground and bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Keep cool
Wear protective gloves/protective clothing/eye protection/face protection
Take action to prevent static discharges
Use non-sparking tools

Response

Immediately call a POISON CENTER or doctor

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Skin

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

Rinse mouth

Do NOT induce vomiting

Fire

In case of fire: Use CO₂, dry chemical, or foam 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)

None identified

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

Hazards resulting from a reaction with other chemicals under normal conditions of use

May form explosive peroxides.

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

3. Composition/information on Ingredients

| Component | CAS No | Weight % |
|---------------------------|------------|----------|
| Tetrahydrofuran | 109-99-9 | 89-90 |
| Lithium diphenylphosphide | 65567-06-8 | 10-11 |

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. |
| Ingestion | Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately. |
| Most important symptoms and effects | 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 |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|---|
| Suitable Extinguishing Media | CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | -20 °C / -4 °F |
| Method - | No information available |
| Autoignition Temperature | No information available |
| 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

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. 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). Oxides of phosphorus.

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 |
|--------|--------------|-------------|------------------|
| 3 | 3 | 0 | N/A |

6. Accidental release measures

Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. 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.

Environmental Precautions

Should not be released into the environment.

Methods for Containment and Clean 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.

7. Handling and Storage

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. 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.

Storage.

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Flammables area. Keep away from heat, sparks and flame. Store contents under argon. 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. Incompatible Materials. Strong oxidizing agents.

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH | Mexico OEL (TWA) |
|-----------------|--------------------------------------|--|--|--|
| Tetrahydrofuran | 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 TWA: 590 mg/m ³ | IDLH: 2000 ppm TWA: 200 ppm TWA: 590 mg/m ³ STEL: 250 ppm STEL: 735 mg/m ³ | TWA: 200 ppm TWA: 590 mg/m ³ STEL: 250 ppm STEL: 735 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

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

Personal Protective Equipment

| | |
|---------------------------------|---|
| Eye/face Protection | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| Skin and body protection | Wear 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: | low boiling organic solvent. Type AX. Brown. conforming to EN371. |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |

9. Physical and chemical properties**Appearance****Physical State**

Liquid

Color**Odor****Odor Threshold****Property****Melting Point/Range****Softening Point****Boiling Point/Range****Flash Point****Flammability (liquid)****Flammability (solid,gas)****Explosion Limits**

No information available

No information available

Values

No data available

No data available

65 - 67 °C / 149 - 152.6 °F

-20 °C / -4 °F

Highly flammable

Not applicable

No data available

Remarks**• Method**

@ 760 mmHg

Method - No information available

On basis of test data

Liquid

Autoignition Temperature

No data available

Decomposition Temperature

No data available

pH

No information available

Viscosity

No data available

Water Solubility

Water reactive

Solubility in other solvents

No information available

Partition Coefficient (n-octanol/water)**Component**

log Pow

Tetrahydrofuran

0.45

Vapor Pressure

No data available

Density / Specific Gravity

0.925

Bulk Density

Not applicable

Liquid

Vapor Density

No data available

(Air = 1.0)

Particle characteristics

Not applicable (liquid)

Other Information**Explosive Properties**

Vapors may form explosive mixtures with air

10. Stability and reactivity**Reactive Hazard**

No

Stability

Moisture sensitive. Air sensitive. May form explosive peroxides.

| | |
|---|--|
| 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. |
| Incompatible Materials | Strong oxidizing agents |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Oxides of phosphorus |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Information on expected route of exposure

| | |
|-------------------|--|
| Inhalation | Causes burns. May be harmful if inhaled. |
| Ingestion | Causes burns. May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |
| Eyes | Causes burns. |
| Skin | Causes burns. May be harmful in contact with skin. |

Toxicology data for the components

| 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 |

Toxicologically Synergistic Products No information available

(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 (89-90) | 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 (89-90) | OECD Test Guideline 476 Gene cell mutation | in vivo Mammalian | negative |
| | OECD Test Guideline 473 Chromosomal aberration assay | in vitro Mammalian | negative |

(f) carcinogenicity; Category 2

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

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|-----------------|------------|------------|------------|------------|------------|------------|
| Tetrahydrofuran | 109-99-9 | Group 2B | Not listed | A3 | X | A3 |
| Lithium | 65567-06-8 | Not listed |

| | | | | | |
|-------------------|--|--|--|--|--|
| diphenylphosphide | | | | | |
|-------------------|--|--|--|--|--|

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; No data available

| Component | Test method | Test species / Duration | Study result |
|-------------------------------------|-------------------------|-------------------------|-------------------|
| Tetrahydrofuran 109-99-9 (89-90) | 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; No data available

Target Organs No information available.

(j) aspiration hazard; No data available

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 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.

Other Adverse Effects The toxicological properties have not been fully investigated.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

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

12. Ecological information

Ecotoxicity

Do not empty into drains. Do not flush into surface water or sanitary sewer system. Reacts with water so no ecotoxicity data for the substance is available.

| 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 |

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

| Component | log Pow |
|-----------------|---------|
| Tetrahydrofuran | 0.45 |

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

DOT

| | |
|--------------------------------|--|
| UN-No | UN2924 |
| Proper Shipping Name | Alcohols, n.o.s., (Ethanol, Methanol) |
| Technical Shipping Name | Tetrahydrofuran, Lithium diphenylphosphide |
| Hazard Class | 3 |
| Subsidiary Hazard Class | 8 |
| Packing Group | II |

TDG

| | |
|--------------------------------|--|
| UN-No | UN2924 |
| Proper Shipping Name | Flammable liquid, corrosive, n.o.s. |
| Technical Shipping Name | Tetrahydrofuran, Lithium diphenylphosphide |
| Hazard Class | 3 |
| Subsidiary Hazard Class | 8 |
| Packing Group | II |

IATA

| | |
|--------------------------------|--|
| UN-No | UN2924 |
| Proper Shipping Name | Flammable liquid, corrosive, n.o.s. |
| Technical Shipping Name | Tetrahydrofuran, Lithium diphenylphosphide |
| Hazard Class | 3 |
| Subsidiary Hazard Class | 8 |
| Packing Group | II |

IMDG/IMO

| | |
|--------------------------------|--|
| UN-No | UN2924 |
| Proper Shipping Name | Flammable liquid, corrosive, n.o.s. |
| Technical Shipping Name | Tetrahydrofuran, Lithium diphenylphosphide |
| 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 - Active-Inactive | TSCA - EPA Regulatory Flags |
|---------------------------|------------|------|---|-----------------------------|
| Tetrahydrofuran | 109-99-9 | X | ACTIVE | - |
| Lithium diphenylphosphide | 65567-06-8 | - | - | - |

Legend:

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

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|---------------------------|------------|-----|------|-----------|-------|------|------|------|-------|----------|
| Tetrahydrofuran | 109-99-9 | X | - | 203-726-8 | X | X | X | X | X | KE-33454 |
| Lithium diphenylphosphide | 65567-06-8 | - | - | - | - | - | - | - | - | - |

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

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

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) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

| Component | Hazardous Substances RQs | CERCLA Extremely Hazardous Substances RQs | SARA Reportable Quantity (RQ) |
|-----------------|--------------------------|---|-------------------------------|
| Tetrahydrofuran | 1000 lb | - | 1000 lb 454 kg |

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 |

U.S. State Right-to-Know**Regulations**

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------------|---------------|------------|--------------|----------|--------------|
| Tetrahydrofuran | 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 Serious risk, Grade 3

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) |
|---------------------------|------------|---|---|---|
| Tetrahydrofuran | 109-99-9 | - | Use restricted. See entry 75. (see link for restriction details) | - |
| Lithium diphenylphosphide | 65567-06-8 | - | - | - |

REACH links

<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 |
| Lithium diphenylphosphide | 65567-06-8 | Not applicable | Not applicable | Not applicable | Not applicable |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

| 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 |
| Lithium diphenylphosphide | 65567-06-8 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other Information

Prepared By

Product stewardship (Regulatory Affairs)
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19-Dec-2025

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19-Dec-2025

Revision Summary

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

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