

## SAFETY DATA SHEET

acc.to ISO/DIS 11014 for USA

### 1 PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifier

**Product name:** 1.0 M LIPF6 IN EC/DMC/EMC (25:30:45 BY WT.) +3% VC

**Other means of identification:** For further information, please refer to section 9 of the SDS.

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

**Identified uses:** Electrolyte For research and development purposes only.

**Uses advised against:** No uses advised against identified.

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

**Manufacturer / Supplier** FUCHS LUBRICANTS GERMANY GmbH  
Friesenheimer Str. 19  
68169 Mannheim

Telephone: +49 621 3701-0 (ZENTRALE)

Fax: +49 621 3701-570

#### Contact for request of safety data sheets

E-mail: Automotive lubricants CS.Services-FLG@fuchs.com

Industrial lubricants

Telephone: +49 621 3701-0 (ZENTRALE)

#### Informing department for safety data sheets

E-mail: produktsicherheit-FLG@fuchs.com

**1.4 US contact telephone :** 708-333-8900

**Emergency telephone:** 800-255-3924

### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

The product has been classified and labelled as hazardous according to the legislation in force.

##### Physical Hazards

Flammable liquids Category 2

##### Health Hazards

Acute toxicity (Oral) Category 4

Skin Corrosion/Irritation Category 1A

Serious Eye Damage/Eye Irritation Category 1

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Skin sensitizer Category 1

Specific Target Organ Toxicity - Repeated Exposure Category 1

Specific Target Organ Toxicity - Repeated Exposure Category 2

**Environmental Hazards**

Chronic hazards to the aquatic environment Category 3

**Hazard summary****Physical Hazards:** No data available.**2.2 Label Elements****Signal Words:** Danger

**Hazard Statement(s):** H225: Highly flammable liquid and vapor.  
H302: Harmful if swallowed.  
H314: Causes severe skin burns and eye damage.  
H317: May cause an allergic skin reaction.  
H372: Causes damage to organs through prolonged or repeated exposure.  
H412: Harmful to aquatic life with long lasting effects.

**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 equipment.  
P242: Use non-sparking tools.  
P243: Take action to prevent static discharges.  
P260: Do not breathe dust/fume/gas/mist/vapors/spray.  
P264: Wash thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P273: Avoid release to the environment.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.

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**Response:**

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].  
P363: Wash contaminated clothing before reuse.  
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.  
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P310: Immediately call a POISON CENTER/doctor.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P370 + P378: In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.

**Storage:** P405: Store locked up.

**Disposal:** P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**2.3 Other hazards:** By handling of mineral oil products and chemical products no particular hazard is known when normal precautions (item 7) and personal protective equipment (item 8) are kept.

**Unknown toxicity:** Due to information available product does not contain any ingredients of unknown toxicity.

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.2 Mixtures

**General information:** Mixture of the substances listed below with harmless additions.

Chemical name	Identifier	Concentration *	Notes
Ester derivative	623-53-0	25.00 - <50.00%	
Ethylene carbonate	96-49-1	10.00 - <25.00%	
Lithium hexafluorophosphate	21324-40-3	10.00 - <20.00%	
Ester derivative	872-36-6	1.00 - <3.00%	

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

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#### Classification

Chemical name	Identifier	Classification
Ester derivative	623-53-0	Flam. Liq. 2;H225
Ethylene carbonate	96-49-1	Acute Tox. 4;H302, STOT RE 2;H373, Eye Irrit. 2;H319
Lithium hexafluorophosphate	21324-40-3	Eye Dam. 1;H318, Skin Corr. 1A;H314, Acute Tox. 3;H301, STOT RE 1;H372
Ester derivative	872-36-6	Aquatic Chronic 2;H411, Acute Tox. 4;H302, Skin Irrit. 2;H315, Skin Sens. 1;H317, Eye Dam. 1;H318, STOT RE 2;H373, Acute Tox. 3;H311

#### 4 FIRST AID MEASURES

**General:** Instantly remove any clothing soiled by the product.

##### 4.1 Description of first aid measures

**Inhalation:** Supply fresh air; consult doctor in case of symptoms.

**Eye contact:** Promptly wash eyes with plenty of water while lifting the eye lids.

**Skin Contact:** Wash with soap and water.

**Ingestion:** Rinse mouth thoroughly.

**4.2 Most important symptoms and effects, both acute and delayed:** May cause skin and eye irritation.

**4.3 Indication of any immediate medical attention and special treatment needed** Get medical attention if symptoms occur.

#### SECTION 5: Firefighting measures

##### 5.1 Extinguishing media

**Suitable extinguishing media:** CO<sub>2</sub>, fire extinguishing powder or fog like water spraying. Extinguish larger fires with alcohol resistant foam or spray water with suitable surfactant added

**Unsuitable extinguishing media:** Water with a full water jet.

**5.2 Special hazards arising from the substance or mixture:** During fire, gases hazardous to health may be formed.

##### 5.3 Advice for firefighters

**Special fire-fighting procedures:** Move container from fire area if it can be done without risk. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations. Collect contaminated fire fighting water separately. It must not enter drains.

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**Special protective equipment for fire-fighters:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures:** In case of spills, beware of slippery floors and surfaces. Keep away from sources of ignition - No smoking.
- 6.2 Environmental Precautions:** Prevent from spreading (e.g. by binding or oil barriers). Avoid release to the environment. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so. Do not allow to enter drainage system, surface or ground water.
- 6.3 Methods and material for containment and cleaning up:** Absorb with liquid-binding material (sand, diatomite, acidbinders, universal binders, sawdust). Dispose of the material collected according to regulations. Stop the flow of material, if this is without risk.
- 6.4 Reference to other sections:** See Section 8 of the SDS for Personal Protective Equipment. See Section 7 for information on safe handling See Section 13 for information on disposal.

#### SECTION 7: Handling and storage:

- 7.1 Precautions for safe handling:** Prevent formation of aerosols. Do not eat, drink or smoke when working with the product. Take usual precautions when handling mineral oil products or chemical products. Observe good industrial hygiene practices. Provide adequate ventilation.
- 7.2 Conditions for safe storage, including any incompatibilities:** Store in original tightly closed container. Keep separate from food, feedstuffs, fertilizers and other sensitive material. Store away from incompatible materials. No special precautions necessary if used correctly. Use only containers specifically permitted for this substance/product. Protect from contamination
- 7.3 Specific end use(s):** Not applicable

### 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### 8.1.Exposure Limits

None of the components have assigned exposure limits.

#### 8.2.Exposure controls

##### Appropriate engineering controls:

Provide adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

**Product name:** 1.0 M LIPF6 IN EC/DMC/EMC (25:30:45 BY WT.) +3% VC

<b>General information:</b>	Wash hands before breaks and after work. Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. The usual precautionary measures should be adhered to in handling the chemicals or the mineral oil products.
<b>Eye/face protection:</b>	Avoid contact with skin and eyes. Goggles/face shield are recommended. If risk of splashing, wear safety goggles or face shield.
<b>Skin protection</b> <b>Hand Protection:</b>	Material: Nitrile butyl rubber (NBR). Min. Breakthrough time: $\geq 480$ min Recommended thickness of the material: $\geq 0.38$ mm  Avoid long-term and repeated skin contact. Suitable gloves can be recommended by the glove supplier. Use skin protection cream for preventive skin protection. Protective gloves, where permitted in acc. to safety directions. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
<b>Other:</b>	Do not carry cleaning cloths impregnated with the product in trouser pockets. Wear suitable protective clothing.
<b>Respiratory Protection:</b>	Ensure good ventilation/exhaustion at the workplace. Avoid breathing vapour/ aerosol.
<b>Thermal hazards:</b>	No data available.
<b>Hygiene measures:</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.
<b>Environmental Controls:</b>	No data available.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Physical state:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Characteristic
<b>Odor Threshold:</b>	Not applicable for mixtures
<b>pH:</b>	not applicable
<b>Freezing point:</b>	Not applicable for mixtures
<b>Boiling Point:</b>	Value not relevant for classification
<b>Flash Point:</b>	20 °C
<b>Evaporation Rate:</b>	Not applicable for mixtures
<b>Flammability (solid, gas):</b>	Value not relevant for classification
<b>Flammability Limit - Upper (%)—:</b>	Not applicable for mixtures
<b>Flammability Limit - Lower (%)—:</b>	Not applicable for mixtures

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<b>Vapor pressure:</b>	Not applicable for mixtures
<b>Relative vapor density:</b>	Not applicable for mixtures
<b>Density:</b>	No data available.
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	Soluble
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	Not applicable for mixtures
<b>Autoignition Temperature:</b>	Value not relevant for classification
<b>Decomposition Temperature:</b>	Value not relevant for classification
<b>Flow time:</b>	Value not relevant for classification
<b>Explosive properties:</b>	Value not relevant for classification
<b>Oxidizing properties:</b>	Value not relevant for classification
<b>9.2 Other information</b>	No data available.

#### SECTION 10: Stability and reactivity

<b>10.1 Reactivity:</b>	Stable under normal use conditions.
<b>10.2 Chemical Stability:</b>	Stable under normal use conditions.
<b>10.3 Possibility of hazardous reactions:</b>	Stable under normal use conditions.
<b>10.4 Conditions to avoid:</b>	Stable under normal use conditions.
<b>10.5 Incompatible Materials:</b>	Strong oxidizing substances. Strong acids. Strong bases.
<b>10.6 Hazardous Decomposition Products:</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

#### 11 TOXICOLOGICAL INFORMATION

##### Information on likely routes of exposure

<b>Inhalation:</b>	No data available.
<b>Ingestion:</b>	No data available.
<b>Skin Contact:</b>	No data available.
<b>Eye contact:</b>	No data available.

##### Acute toxicity

##### Oral

<b>Product:</b>	ATEmix: 578.05 mg/kg
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**Dermal  
Product:**

ATEmix: 10,001 mg/kg

**Inhalation  
Product:**

Not classified for acute toxicity based on available data.

**Skin Corrosion/Irritation:  
Product:**

Based on available data, the classification criteria are met.

**Serious Eye Damage/Eye Irritation:  
Product:**

Based on available data, the classification criteria are met.

**Respiratory or Skin Sensitization:  
Product:**

Skin sensitizer: Based on available data, the classification criteria are met.

Respiratory sensitizer: Based on available data, the classification criteria are not met.

**Germ Cell Mutagenicity  
Product:**

Based on available data, the classification criteria are not met.

**Carcinogenicity  
Product:**

Based on available data, the classification criteria are not met.

**IARC: IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**NTP: US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**OSHASp: US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**

No carcinogenic components identified

**Reproductive toxicity  
Product:**

Based on available data, the classification criteria are not met.

**Specific Target Organ Toxicity - Single Exposure****Product:** Based on available data, the classification criteria are not met.**Specific Target Organ Toxicity - Repeated Exposure****Product:** Based on available data, the classification criteria are met. Based on available data, the classification criteria are met.**Aspiration Hazard  
Product:**

Based on available data, the classification criteria are not met.

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**12 ECOLOGICAL INFORMATION**

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## 12.1 Toxicity

### Acute toxicity

**Product:**

Based on available data, the classification criteria are not met.

**Fish****Specified substance(s)**

Ester derivative

LC 50 (Fish, 96 h): &gt; 100 mg/l

Ethylene carbonate

LC 50 (Fish, 96 h): &gt; 100 mg/l

**Aquatic Invertebrates****Specified substance(s)**

Ester derivative

EC 50 (48 h): &gt; 100 mg/l

Ethylene carbonate

EC 50 (48 h): &gt; 100 mg/l

**Chronic Toxicity****Product:**

Based on available data, the classification criteria are met.

**Fish****Specified substance(s)**

Ester derivative

NOEC : 62 mg/l

**Toxicity to Aquatic Plants****Specified substance(s)**

Ester derivative

EC 50 (Alga, 72 h): &gt; 62 mg/l

Ethylene carbonate

EC 50 (Alga, 72 h): &gt; 100 mg/l

## 12.2 Persistence and Degradability

**Biodegradation****Product:**

Not applicable for mixtures

**Specified substance(s)**

Ester derivative

Readily biodegradable

Ethylene carbonate

Readily biodegradable

## 12.3 Bioaccumulative potential

**Product:**

Not applicable for mixtures

## 12.4 Mobility in soil:

**Product:**

Not applicable for mixtures

## 12.5 Results of PBT and vPvB assessment:

The product does not contain any substances fulfilling the PBT/vPvB criteria.

## 12.6 Other adverse effects:

No data available.

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## 13 Disposal considerations

### 13.1 Waste treatment methods

<b>General information:</b>	Dispose in accordance with all applicable regulations.
<b>Disposal methods:</b>	Do not empty into drains; dispose of this material and its container in a safe way. When storing used products, ensure that the waste categories and mixing instructions are observed.

## 14 TRANSPORT INFORMATION

### DOT

14.1 UN number or ID number:	UN 2920
14.2 Proper Shipping Name:	Corrosive liquids, flammable, n.o.s.(Lithium hexafluorophosphate, Ester derivative)
14.3 Transport Hazard Class(es):	8
14.4 Subsidiary risk label:	—
14.5 Packing Group:	I
14.6 Label(s):	8, 3
14.7 Marine Pollutant:	—

### IMDG - International Maritime Dangerous Goods Code

14.1 UN number or ID number:	UN 2920
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, FLAMMABLE, N.O.S.(Lithium hexafluorophosphate, Ester derivative)
14.3 Transport Hazard Class(es):	8
14.4 Subsidiary risk label:	—
14.5 Packing Group:	I
14.6 Label(s):	8, 3
14.7 Marine Pollutant:	—
14.8 EmS No.:	F-E; S-C

### IATA

14.1 UN number or ID number:	UN 2920
14.2 Proper Shipping Name:	Corrosive liquid, flammable, n.o.s.(Lithium hexafluorophosphate, Ester derivative)
14.3 Transport Hazard Class(es):	8
14.4 Subsidiary risk label:	—
14.5 Packing Group:	I
14.6 Label(s):	8, 3
14.7 Marine Pollutant:	—

## 15 REGULATORY INFORMATION

### US Federal Regulations

#### US State Regulations

##### US. California Proposition 65

WARNING! This product can expose you to chemicals including

METHANOL	which is [are] known to the State of California to cause birth defects or other reproductive harm.
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For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**Inventory Status**

TSCA	On or in compliance with the inventory
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**16 OTHER INFORMATION**

**Revision Information:** Vertical lines in the margin indicate an amendment.

**Wording of the H-statements in section 2 and 3**

H225	Highly flammable liquid and vapor.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

**Revision Date:**

15.12.2022

**Disclaimer:**

The data contained in this safety data sheet are based on our current knowledge and experience and are given to the best of our knowledge and belief. It characterizes the product only with regard to safety requirements for handling, transport and disposal. The data do not describe the product's properties (tech. product specification). Neither should any agreed property nor the suitability of the product for any specific technical application be deduced from the data contained in this safety data sheet. Modifications on this document are not allowed. The data are not transferable to other products. In the case of mixing the product with other products or in the case of processing, the data in this safety data sheet are not necessarily valid for the new-made material. It is the responsibility of the recipient of the product to observe federal, state and local law. Please contact us to obtain up-to-date safety data sheets. This document was issued electronically and has no signature.