

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

Article number: E054

UFI: X811-F0G1-M00F-VK13

1.2 Relevant identified uses of the substance or mixture and uses advised against No other important information available.

Application of the substance / the mixture This product is intended for the exclusive use of Research and Development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Solvionic SA
195 route d'Espagne
31036 TOULOUSE
FRANCE

Phone number: +33 (0)5.34.63.35.35

Further information obtainable from: HSE Department

1.4 Emergency telephone number:

ORFILA (INRS): +33 (0)1.45.42.59.59

CCHST: 1-800-668-4284 (Canada & U.S.A)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS02



GHS05



GHS07



GHS08

Signal word Danger

Hazard-determining components of labelling:

ethylene carbonate
Lithium hexafluorophosphate
Fluoroethylene carbonate

Hazard statements

H226 Flammable liquid and vapour.

(Contd. on page 2)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 1)

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.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures- **Description:** Mixture of substances listed below with nonhazardous additions.**- Dangerous components:**

CAS: 96-49-1 EINECS: 202-510-0	ethylene carbonate ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Eye Irrit. 2, H319	>40–≤60%
CAS: 623-53-0 ELINCS: 433-480-9	Ethyl methyl carbonate ⚠ Flam. Liq. 2, H225	>25–≤40%
CAS: 21324-40-3 EINECS: 244-334-7	Lithium hexafluorophosphate ⚠ Acute Tox. 3, H301; ⚠ STOT RE 1, H372; ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318	>10–≤25%
CAS: 114435-02-8 ELINCS: 483-360-5	Fluoroethylene carbonate ⚠ STOT RE 1, H372; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	≤2,5%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures**- General information:**

Immediately remove any clothing soiled by the product.
 Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

. After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

. After skin contact: Immediately wash with water and soap and rinse thoroughly.**. After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.**. After swallowing:**

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.**4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media**. Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**. For safety reasons unsuitable extinguishing agents:** Water with full jet**5.2 Special hazards arising from the substance or mixture** During heating or in case of fire poisonous gases are produced.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 2)

5.3 Advice for firefighters

. **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Use individual protective gear.

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage
7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

. **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities

. **Storage:**

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep container tightly sealed.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

8.1 Control parameters

- **Ingredients with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

. **Additional information:** The lists valid during the making were used as basis.

8.2 Exposure controls

- **Personal protective equipment:**

. **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

. **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

. **Protection of hands:**



Protective gloves

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 3)

Neoprene gloves

To minimise the wetness in the glove due to perspiration changing of gloves during a shift is required.

Material of gloves Neoprene gloves**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

. Eye protection:

Tightly sealed goggles

. Body protection: Use protective suit.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- General Information

. Appearance:

Form:	Fluid
Color:	Colorless to light yellow
Odor:	Not determined.
Odor threshold:	Not determined.

- pH-value: Not determined.

- Change in condition

. Melting point/freezing point:	Undetermined.
. Initial boiling point and boiling range:	107 °C
- Flash point:	23 - 60 °C
- Flammability (solid, gas):	Not applicable.
. Ignition temperature:	443 °C

. Decomposition temperature:

21324-40-3	Lithium hexafluorophosphate	175 °C
------------	-----------------------------	--------

- Auto-ignition temperature:	Product is not selfigniting.
- Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- Explosion limits:	
. Lower:	3,6 Vol %
. Upper:	16,1 Vol %
- Vapour pressure at 25 °C:	43 hPa

- Density at 20 °C:	1,276 g/cm ³
. Bulk density:	1.276 kg/m ³
. Relative density	Not determined.
. Vapour density	Not determined.
. Evaporation rate	Not determined.

- Solubility in / Miscibility with

. water:	Not miscible or difficult to mix.
- Partition coefficient: n-octanol/water:	Not determined.
- Viscosity:	
. Dynamic:	Not determined.
. Kinematic:	Not determined.
- Solvent content:	
. VOC (EC)	0,00 %

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions No dangerous reactions known.

10.4 Conditions to avoid No further relevant information available.

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 4)

10.5 Incompatible materials: Strong oxidizer and strong base.

10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed.

LD/LC50 values relevant for classification:

CAS: 96-49-1 ethylene carbonate

Oral	LD50	10.400 mg/kg (rat)
Dermal	LD50	2.000 mg/kg (rat)

CAS: 623-53-0 Ethyl methyl carbonate

Oral	LD50	>5.000 mg/kg (rat)
Inhalative	LC50/4 h	>17,6 mg/l (rat)

CAS: 21324-40-3 Lithium hexafluorophosphate

Oral	LD50	200 mg/kg (rat)
		300 mg/kg (rabbit)
Dermal	LD50	mg/kg (rat)
		mg/kg (rabbit)

CAS: 114435-02-8 Fluoroethylene carbonate

Oral	LD50	500 mg/kg (rat)
Dermal	LD50	>2.000 mg/kg (rat)

- Primary irritant effect:

. Skin corrosion/irritation

Causes severe skin burns and eye damage.

. Serious eye damage/irritation

Causes serious eye damage.

- Respiratory or skin sensitisation

May cause an allergic skin reaction.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

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

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

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

- Specific target organ toxicity - single exposure Based on available data, the classification criteria are not met.

- Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

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

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: No further relevant information available.

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

Additional ecological information:

General notes:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even small quantities leak into the ground.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 5)

12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

HP3	Flammable
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP6	Acute Toxicity
HP8	Corrosive

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR/RID/ADN, IMDG, IATA

UN2920

14.2 UN proper shipping name

ADR/RID/ADN

UN2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Lithium hexafluorophosphate, Ethyl methyl carbonate)

IMDG, IATA

CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Lithium hexafluorophosphate, Ethyl methyl carbonate)

14.3 Transport hazard class(es)

ADR/RID/ADN



Class
Label
IMDG

8 Corrosive substances.
8+3



Class
Label
IATA

8 Corrosive substances.
8/3



Class
Label

8 Corrosive substances.
8 (3)

14.4 Packing group

ADR/RID/ADN, IMDG, IATA

II

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Hazard identification number (Kemler code):

Warning: Corrosive substances.

EMS Number:

83

Stowage Category

F-E,S-C

E

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 6)

Stowage Code

SW1 Protected from sources of heat.
SW2 Clear of living quarters.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

Transport/Additional information:**ADR/RID/ADN****Limited quantities (LQ)**

1L

Excepted quantities (EQ)

Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

Transport category

2

Tunnel restriction code

D/E

IMDG**Limited quantities (LQ)**

1L

Excepted quantities (EQ)

Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":

UN 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(LITHIUM HEXAFLUOROPHOSPHATE, ETHYL METHYL CARBONATE), 8 (3), II

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**Directive 2012/18/EU**

Named dangerous substances - ANNEX I None of the ingredients is listed.

Seveso category P5c FLAMMABLE LIQUIDS

Qualifying quantity (tonnes) for the application of lower-tier requirements 5.000 t

Qualifying quantity (tonnes) for the application of upper-tier requirements 50.000 t

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

15.2 Chemical safety assessment:

For this product, no chemical safety assessment has been performed.

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

For research and development use only.

Relevant phrases

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H312 Harmful 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.

Department issuing SDS: Environmental Protection Service**Contact:**

Mail: hse@solvionic.com

Phone number: +33 (0)5.34.63.35.35

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

(Contd. on page 8)

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date 03.04.2020

Version number 3

Revision: 03.04.2020

Trade name: 1mol/L Lithium hexafluorophosphate in (1:1 vol.%) Ethylene carbonate : Ethyl methyl carbonate with 2wt.% Fluoroethylene carbonate - 99,9%

(Contd. of page 7)

GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 2: Flammable liquids – Category 2
 Flam. Liq. 3: Flammable liquids – Category 3
 Acute Tox. 3: Acute toxicity - oral – Category 3
 Acute Tox. 4: Acute toxicity - oral – Category 4
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Skin Sens. 1: Skin sensitisation – Category 1
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 * **Data compared to the previous version altered.**

GB