Printing date 07.11.2014 Revision: 07.11.2014

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

- · 1.1 Product identifier
- · Trade name: Lithium Thionyl Chloride Battery
- 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
- · Application of the substance / the mixture Lithium-based battery product.
- · 1.3 Details of the supplier of the Safety Data Sheet
- Manufacturer/Supplier:
 American Standard Brands
 1 Centennial Avenue

1 Centennial Avenue Piscataway, NJ 08855 Phone: 1-800-322-5546

· 1.4 Emergency telephone number:

ChemTel Inc.

(800)255-3924, +1 (813)248-0585

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008

Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).



Water-react. 2 H261 In contact with water releases flammable gases.

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC

F; Highly flammable

R14/15: Reacts violently with water, liberating extremely flammable gases.

Hazard description:

Note: The hazards listed in this document reference only the contents of cells and/or batteries that are leaking and/or ruptured. Undamaged cells and/or batteries possess no expected health or physical hazards during normal use. Intentional abuse of cells or batteries increases the risk of harm or damage to the product, to the user, and to surrounding materials and personnel. Do not attempt to open sealed cells or batteries. Do not intentionally short-circuit cells or batteries. Do not expose these products to temperatures exceeding the maximum manufacturers rating. Do not dispose of cells/batteries in landfills. Please follow all manufacturer guidelines in the use, storage, and disposal of these products. Consult manufacturer in cases of questions involving specific product usage.

Information references exposures to battery contents, and not exposures to whole units. Exposures to whole units are unlikely to produce health hazards.

Information concerning particular hazards for human and environment:

Do not short circuit, recharge, puncture, incinerate, crush, force discharge or expose to temperatures above the specified range. Upon severe mechanical, electrical or thermal abuse, the cell may vent with the expulsion of some of the content.

(Contd. on page 2)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 1)

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

· 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS02

· Signal word Danger

· Hazard-determining components of labelling:

lithium

· Hazard statements

H261 In contact with water releases flammable gases.

· Precautionary statements

P280 Wear protective gloves / eye protection.

P370+P378 In case of fire: Use for extinction: Fire-extinguishing powder.

P402+P404 Store in a dry place. Store in a closed container.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Additional information:

Information references exposures to battery contents, and not exposures to whole units. Exposures to whole units are unlikely to produce health hazards.

EUH014 Reacts violently with water.

· Hazard description:

WHMIS-symbols:

B6 - Reactive flammable material



· NFPA ratings (scale 0 - 4)



The substance demonstrates unusual reactivity with water.

(Contd. on page 3)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 2)

· HMIS-ratings (scale 0 - 4)

HEALTH 0 Health = 0
FIRE 0 Fire = 0

REACTIVITY 2 Reactivity = 2

· HMIS Long Term Health Hazard Substances

None of the ingredients are listed.

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

SECTION 3: Composition/information on ingredients

- · 3.2 Mixtures
- · **Description**: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:		
CAS: 7719-09-7	thionyl dichloride	25-50%
EINECS: 231-748-8	C R35; 🗙 Xn R20/22	
Index number: 016-015-00-0	R14-29	
	🔷 Skin Corr. 1A, H314	
	Acute Tox. 4, H302; Acute Tox. 4, H332	
CAS: 14024-11-4	lithium tetrachloroaluminate	2,5-10%
EINECS: 237-850-9	🔁 C R35; 🗙 Xn R20/21/22; 🗙 Xi R41	
	Skin Corr. 1B, H314; Eye Dam. 1, H318 Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
	Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 7439-93-2	lithium	2,5-10%
EINECS: 231-102-5	🔁 C R34; 🔥 F R14/15	
Index number: 003-001-00-4		
	Skin Corr. 1B, H314	

Additional information: For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

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

Information references exposures to battery contents, and not exposures to whole units. Exposures to whole units are unlikely to produce health hazards.

Immediately remove any clothing soiled by the product.

Take affected persons out into the fresh air.

After inhalation:

Unlikely route of exposure.

Supply fresh air; consult doctor in case of complaints.

(Contd. on page 4)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 3)

· After skin contact:

Unlikely route of exposure.

Immediately rinse with water.

If skin irritation continues, consult a doctor.

Seek immediate medical help for blistering or open wounds.

· After eye contact:

Unlikely route of exposure.

Protect unharmed eye.

Immediately remove contact lenses if possible.

Rinse opened eye for several minutes under running water. Then consult a doctor.

- After swallowing: Do not induce vomiting; call for medical help immediately.
- · 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

- · Hazards Danger of gastric perforation.
- · 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:

Fire-extinguishing powder

Sand

Water in flooding quantities.

- For safety reasons unsuitable extinguishing agents: None.
- 5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

- 5.3 Advice for firefighters
- · Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

· Additional information Cool endangered receptacles with water in flooding quantites.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

If containers are leaking, use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · 6.3 Methods and material for containment and cleaning up:

Use inert material (clay, sawdust, kaolin) to absorb material and sweep up. Prevent spilled material from entering sewers, drains, bodies of water.

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to item 13.

(Contd. on page 5)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 4)

· 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

Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions.

Keep away from open flames or temperatures exceeding manufacturer ratings. DO NOT ATTEMPT TO OPEN SEALED CELLS OR BATTERIES – BATTERY CONTENTS MAY PRESENT SERIOUS SAFETY AND HEALTH HAZARDS. SHORT-CIRCUITING THE TERMINALS OF A DEVICE MAY RESULT IN DAMAGE TO DEVICE AND ANY NEARBY OBJECTS OR PERSONNEL.

· Information about fire - and explosion protection:

Prevent impact and friction.

Substance/product is ignitable under certain conditions.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

Requirements to be met by storerooms and receptacles:

Store in a dry, well-ventilated place.

Do not use or store near open flame.

Avoid extreme temperatures; battery may rupture and release contents.

Do not store and transport with incompatible materials.

Store individual batteries or cells only in approved packaging in order to avoid inadvertent short circuits, as this may result in damage to device, nearby objects, personnel, or all of the above.

Information about storage in one common storage facility:

Store away from foodstuffs.

Store away from water.

Do not store together with acids.

Further information about storage conditions:

Store in dry conditions.

Protect from humidity and water.

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:

7719-09-7 thionyl dichloride

REL (USA) Ceiling limit: 5 mg/m³, 1 ppm

TLV (USA) | Ceiling limit: 0,2 ppm

(Contd. on page 6)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 5)

EL (Canada) Ceiling limit: 1 ppm

EV (Canada) Ceiling limit: 5 mg/m³, 1 ppm

- **DNELs** No further relevant information available.
- · PNECs No further relevant information available.
- · 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.

Avoid contact with the eyes.

Do not inhale gases / fumes / aerosols.

Information is only applicable to product contents, and not to product as normally supplied. This information is applicable to damaged, leaking, or spilled product as contact with contents is possible under these conditions.

· Respiratory protection:

Not required under normal conditions of use.

For spills, respiratory protection may be advisable.

· Protection of hands:

Not required under normal conditions of use.

Wear protective gloves to handle contents of damaged or leaking units.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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:



Safety glasses

Body protection:

Not required under normal conditions of use.

Protection may be required for spills.

· Limitation and supervision of exposure into the environment

No further relevant information available.

Risk management measures

See Section 7 for additional information.

(Contd. on page 7)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

No further relevant information available.

(Contd. of page 6)

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Impermeable containing liquid and solid contents plus

inert carrier materials.

Colour: Greenish-blue.
Odourless
Odour threshold: Not determined.

pH-value: Not determined.

· Change in condition

Melting point/Melting range:
Boiling point/Boiling range:
Undetermined.

Flash point:
Flammability (solid, gaseous):
Auto/Self-ignition temperature:
Not applicable.
Not determined.
Not determined.

· **Self-igniting:** Product is not self-igniting.

• Danger of explosion: Product does not represent an explosion hazard during normal

use. Leaking contents may react with water to produce explosive

or flammable gas.

· Explosion limits:

Lower:
Upper:
Not determined.
Not determined.

Vapour pressure:
Not determined.

Density:
Relative density
Vapour density
Vapour density
Evaporation rate
Not determined.
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.

(Contd. on page 8)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 7)

· 9.2 Other information

No further relevant information available.

SECTION 10: Stability and reactivity

- · 10.1 Reactivity
- · 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

· 10.3 Possibility of hazardous reactions

Hazardous reactions generally occur with contents of leaking batteries only.

Strong exothermic reaction with acids.

Toxic fumes may be released if heated above the decomposition point.

Reacts violently with water.

Contact with water will cause spontaneous hydrolysis (Can be explosive!).

- 10.4 Conditions to avoid Keep away from heat and direct sunlight.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products:

Carbon monoxide and carbon dioxide

Contact with decomposition products does not normally occur; information is applicable only to damaged devices.

Flammable gases/vapours

Toxic metal oxide smoke

Chlorine

Chlorine compounds

SECTION 11: Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity:
- LD/LC50 values relevant for classification:

7719-09-7 thionyl dichloride

Inhalative LC50/4h 2,7 mg/l (rat)

- · Primary irritant effect:
- on the skin: Strong caustic effect in case of contact with electroyte only.
- on the eye: Strong caustic effect in case of contact with electroyte only.
- Sensitisation: No sensitising effects known.
- · Additional toxicological information:

Information references exposures to battery contents, and not exposures to whole units. Exposures to whole units are unlikely to produce health hazards.

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: The product contains materials that are harmful to the environment.

(Contd. on page 9)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 8)

- · 12.2 Persistence and degradability Not easily biodegradable
- 12.3 Bioaccumulative potential No further relevant information available.
- · 12.4 Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

This statement was deduced from the properties of the single components.

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage

- · 12.5 Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- · 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. Contact waste processors for recycling information.

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

- · Uncleaned packaging:
- · **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number

· DOT, ADR, IMDG, IATA

· 14.2 UN proper shipping name

· DOT

· ADR

· IMDG, IATA

· 14.3 Transport hazard class(es)

· DOT, IMDG, IATA



9 Miscellaneous dangerous substances and articles.

(Contd. on page 10)

Lithium batteries, contained in equipment

3091 LITHIUM METAL BATTERIES CONTAINED IN

EQUIPMENT

UN3091

LITHIUM METAL BATTERIES CONTAINED IN

EQUIPMENT

· Class

(Contd. of page 9)

Safety Data Sheet according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Printing date 07.11.2014 Revision: 07.11.2014

9

Trade name: Lithium Thionyl Chloride Battery

· ADR · Class 9 (M4) Miscellaneous dangerous substances and articles. · Label · 14.4 Packing group · DOT. ADR. IMDG. IATA Ш · 14.5 Environmental hazards: · Marine pollutant: No Special marking (IATA): Prohibited from Transport in Passenger Aircraft. Cargo Aircraft Only. · 14.6 Special precautions for user Warning: Miscellaneous dangerous substances and articles. · EMS Number: F-A,S-I · 14.7 Transport in bulk according to Annex II of

· ADR

· Label

· Limited quantities (LQ) 0

MARPOL73/78 and the IBC Code

· Transport/Additional information:

• Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

· Transport category 2 · Tunnel restriction code E

· IMDG

· Limited quantities (LQ)

· Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

· UN "Model Regulation": UN3091, LITHIUM METAL BATTERIES CONTAINED

IN EQUIPMENT, 9, II

Not applicable.

Battery Specifications: Contains 2.2 g lithium 8500 mAh, 3.6 volts (30.6 watt-hours)

(Contd. on page 11)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 10)

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · United States (USA)
- ·SARA
- Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65 (California):

Exposure to contents is unlikely. Listings are present to ensure compliance with the Proposition 65 notification requirement.

· Chemicals known to cause cancer:

7440-02-0 nickel

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

- · Carcinogenic Categories
- · EPA (Environmental Protection Agency)

None of the ingredients are listed.

· IARC (International Agency for Research on Cancer)

7440-02-0 nickel

|1

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

- · Canada
- · Canadian Domestic Substances List (DSL)

All ingredients are listed.

· Canadian Ingredient Disclosure list (limit 0.1%)

7440-02-0 nickel

· Canadian Ingredient Disclosure list (limit 1%)

7719-09-7 thionyl dichloride

(Contd. on page 12)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 11)

· Other regulations, limitations and prohibitive regulations

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

· Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients are listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

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.

· Relevant phrases

11000	
H260	In contact with water releases flammable gases which may ignite spontaneously.

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H332 Harmful if inhaled.

R14 Reacts violently with water.

R14/15 Reacts violently with water, liberating extremely flammable gases.

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R20/22 Harmful by inhalation and if swallowed. R29 Contact with water liberates toxic gas.

R34 Causes burns.

R35 Causes severe burns.

R41 Risk of serious damage to eyes.

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

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Water-react. 1: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 1

Water-react. 2: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 2

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

(Contd. on page 13)

Printing date 07.11.2014 Revision: 07.11.2014

Trade name: Lithium Thionyl Chloride Battery

(Contd. of page 12)

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

· Sources

SDS Prepared by: ChemTel Inc.

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