

**Product Safety Data Sheet**

**SDX 01**      **Lithium /Sulphur (Sulfer) Dioxide Cells**      **Simplified Advice Code**  
 (Batteries)      **G**  
 10/05/01






**1. Identification of the Substance or Preparation and Company**

**Product** Lithium/Sulphur (Sulfer) Dioxide Cells (Batteries)  
 (Li –SO<sub>2</sub>)  
**Company** Saft Ltd  
 River Drive  
 South Shields  
 Tyne & Wear  
 NE33 2TR

Tel. No. 0191 456 1451  
 Fax No. 0191 456 6383

**2. Composition & Information on Ingredients**

Each cell consists of a hermetically sealed metallic container containing a number of chemicals and materials of construction of which the following could potentially be hazardous upon release.

Ingredient	Content	CAS No.	CHIP Classification
Lithium (Li)	2.5 – 3.0%	7439-93-2	 F; R14/15 C; R34 R14/15, R21,R22, R35, R41, R43 S2, S8, S45
Acetonitrile (CH <sub>3</sub> CN)	8.3 – 8.8%	75-05-8	 F; R11, R14/15, R21, R22, S2, S8, S24, S26, S36, S37, S45
Sulphur Dioxide (SO <sub>2</sub> )	25 – 30%	7446-09-5	  R22, R36/37, R41, S2, S8, S22, S24, S26, S36, S37, S45
Lithium Bromide	2.0 – 2.5%		 NONE KNOWN
Carbon (C <sub>n</sub> )	6.5 – 7.0%		

**3. Hazards Identification**

Do not short circuit, recharge, puncture, incinerate, crush, immerse, force discharge or expose to temperatures above the temperature range of the battery. The cell has a vent, which upon severe mechanical, electrical or thermal abuse will open and allow some of the chemicals listed above to escape.

**4. First Aid Measures**

- Inhalation** Remove from exposure, rest and keep warm. In severe cases obtain medical attention.
- Skin Contact** Wash off skin thoroughly with water. Remove contaminated clothing and wash before reuse. In severe cases obtain medical attention.
- Eye Contact** Irrigate thoroughly with water for at least 15 minutes. Obtain medical attention.
- Ingestion** Wash out mouth thoroughly with water and give plenty of water to drink. Obtain medical attention.
- Further Treatment** All cases of eye contamination, persistent skin irritation and casualties who have swallowed this substance or been affected by breathing its vapours should be seen by a Doctor.

**5. Fire Fighting Measures**

If cells are directly involved in a fire, DO NOT USE WATER, SAND, CO<sub>2</sub>, DRY POWDER OR SODA ASH EXTINGUISHERS. A Lith-X (graphite base) fire extinguisher or material is the only recommended extinguishing media for fires involving lithium metal or some types of cell. If a fire is in an adjacent area, and cells are packed in their original containers, the fire can be fought based on fueling material, e.g. paper and plastic products. Avoid fume inhalation.

- Extinguishing Media** Lith-X (graphite based) or other metal (Class D) powder fire extinguisher.





**6. Accidental Release Measures**

Do not breath vapours or touch liquid with bare hands. If the skin has come into contact with the electrolyte it should be washed thoroughly with water. Graphite powder should be used to absorb the exudation, seal leaking battery and graphite powder in plastic bag and dispose of as Special Waste.

**7. Handling and Storage**

- Handling** Do not short circuit or expose to temperatures above the temperature rating of battery. Do not recharge, over-discharge, force discharge, immerse puncture or crush.
- Storage** Store in a cool place but prevent condensation on cells and batteries. Elevated temperatures can result in shortened battery life and degrade performance. Do not store batteries in high humidity environments for long periods.

## 8. Exposure Controls & Personal Protection

<b>Occupational Exposure Standard</b>	8hr TWA	10min TWA
	<b>Respiratory Protection</b>	In all fire situations, use self-contained breathing apparatus.
	<b>Hand Protection</b>	In the event of leakage wear gloves.
	<b>Eye Protection</b>	Safety glasses are recommended during handling
	<b>Other</b>	In the event of leakage, wear chemical apron.

## 9. Physical and Chemical Properties

<b>Appearance</b>	Cylindrical shape
<b>Odour</b>	If leaking, gives off a pungent corrosive odour.
<b>pH</b>	Not applicable
<b>Flash Point</b>	Not applicable unless individual components exposed
<b>Flammability</b>	Not applicable unless individual components exposed
<b>Relative Density</b>	Not applicable unless individual components exposed
<b>Solubility (Water)</b>	Not applicable unless individual components exposed
<b>Solubility (Other)</b>	Not applicable unless individual components exposed

## 10. Stability and Reactivity

Product is stable under conditions described in Section 7.

<b>Hazardous reactions</b>	Flammable when in contact with moisture.
<b>Hazardous decomposition reactions</b>	Toxic fumes.

## 11. Toxicological Information

<b>Signs &amp; Symptoms</b>	None, unless battery ruptures. In the event of exposure to internal contents, corrosive fumes will be very irritating to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.
<b>Inhalation</b>	Lung irritant.
<b>Skin Contact</b>	Skin irritant
<b>Eye Contact</b>	Eye irritant.
<b>Ingestion</b>	Tissue damage to throat and gastro/respiratory tract if swallowed.
<b>Medical Conditions Generally Aggravated by Exposure</b>	In the event of exposure to internal contents, eczema, skin allergies, lung injuries, asthma and other respiratory disorders may occur.

**12. Ecological Information**

<b>Mammalian effects</b>	None known if used/disposed of correctly.
<b>Eco-toxicity</b>	None known if used/disposed of correctly.
<b>Bioaccumulation potential</b>	None known if used/disposed of correctly.
<b>Environmental fate</b>	None known if used/disposed of correctly.

**13. Disposal Considerations**

DO NOT INCINERATE or subject cells to temperature's in excess of 100°C. Such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

**14. Transport Information**

<b>Label for Conveyance</b>	Cargo Aircraft Only, Class 9 Miscellaneous Dangerous Goods, UN Identification Number.
<b>UN Number</b>	UN3090
<b>Shipping Name</b>	Lithium Batteries
<b>Hazard Classification</b>	Class 9 (Miscellaneous)
<b>Packing group</b>	II
<b>IMDG Code</b>	9033
<b>CAS</b>	
<b>EmS No.</b>	<u>4.1-06</u>
<b>Marine Pollutant</b>	No
<b>ADR Class</b>	Class9,5

**15. Regulatory Information**

<b>Risk Phrases</b>	Lithium	R14/15	Reacts violently with water, liberating extremely flammable gases.
		R21	Harmful in contact with skin.
		R22	Harmful if swallowed.
		R35	Causes burns.
		R41	Risk of serious damage to eye.
		R42/43	May cause sensitization by inhalation and skin contact.
	Acetonitrile (CH <sub>3</sub> CN)	R11	Highly flammable.
		R14/15	Reacts violently with water, liberating extremely flammable gases.
		R21	Harmful in contact with skin.
		R22	Harmful if swallowed.
	Sulphur Dioxide (SO <sub>2</sub> )	R22	Harmful if swallowed.
		R36/37	Irritating to respiratory system.
		R41	Risk of serious damage to eye.

**S A F T**

<b>Safety Phrases</b>	Lithium	S2	Keep out of reach of children
		S8	Keep away from moisture
		S45	In case of incident, seek medical attention.
	Acetonitrile (CH <sub>3</sub> CN)	S2	Keep out of reach of children.
		S8	Keep away from moisture.
		S24	Avoid contact with skin.
		S26	In case of contact with eyes, rinse immediately with plenty of water.
		S36	Wear suitable protective clothing.
		S37	Wear suitable gloves.
	Sulphur Dioxide (SO <sub>2</sub> )	S45	In case of incident, seek medical attention.
		S2	Keep out of reach of children.
		S8	Keep away from moisture.
		S22	Do not breathe dust.
		S24	Avoid contact with skin.
		S26	In case of contact with eyes, rinse immediately with plenty of water.
		S36	Wear suitable protective clothing.
		S37	Wear suitable gloves.
		S45	In case of incident, seek medical attention.

**UK Regulatory References** Classified under CHIP

**16. Other Information**

This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.

This information relates to the specific materials designated and may not be valid for such material used in combination with any other materials or in any process. It is the user's responsibility to satisfy himself as to the suitability and completeness of this information for his particular use.

Saft does not accept liability for any loss or damage that may occur, whether direct, indirect, incidental or consequential, from the use of this information. Saft does not offer warranty against patent infringement.