

Primary lithium batteries

Selector guide



Saft Lithium batteries

meeting your needs...

*For more than 31 years,
Saft has pioneered the
development and production
of primary lithium cells and
battery packs in Europe,
North America and
Asia/Pacific.
Autonomy, power, voltage,
shape, weight, service life,
price... Saft knows how to
tailor battery solutions you
can count on.*

With more than 4,000 employees, 2 R&D centers, 9 manufacturing facilities and 26 local sales organizations, a product range offer covering the 3 main primary lithium chemistries of today, Saft is a truly international player in the field of batteries and power supply systems for professional, industrial, space and military uses.

Among recognized characteristics of the Saft spirit worldwide are quality, performance, reliability, openness and an ability to meet the most demanding challenges. Take advantage of them for your applications!

Lithium power at your service

Lithium is a light metal which exhibits an exceptional specific capacity (3.86 Ah/gram) and unique electrochemical characteristics.

Combining lithium with manganese dioxide (MnO_2) powder or low-freezing point liquid cathode

materials such as thionyl chloride ($SOCl_2$) or sulfur dioxide (SO_2), results in batteries with high energy, low weight, reduced self-discharge rate, and ability to operate under extreme conditions.

Saft's lithium products

3 lithium chemistries are currently available:

- Lithium-thionyl chloride ($Li-SOCl_2$) in *LS/LST/LSX/LSH* 3.6 V cells,
- Lithium-sulfur dioxide ($Li-SO_2$) in *G/LO* 3.0 V cells,
- Lithium-manganese dioxide ($Li-MnO_2$) in *LM* 3.0 V cells.



...exceeding your expectations

The LS and LST cells are *cylindrical* and based on the high-energy concentric "bobbin" electrode configuration. They are available in *standard*, "C" and "W" versions according to the temperature characteristics of the envisioned applications.

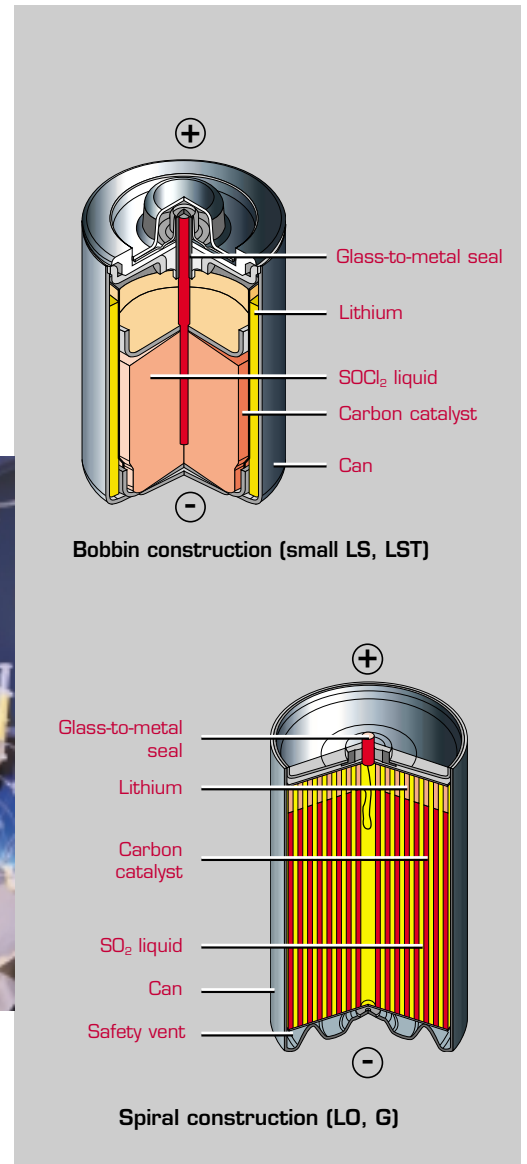
The LSX, LSH, G, LO and LM cells are also *cylindrical* but use the power-optimized "coiled" and "spiral" electrode constructions. The Li-SO₂ cells are available in "SX" and "G" standard versions and in *high pulse capability* "SHX" versions.

The spiral LM cell series is completed with 3 button cells aimed at memory back-up.

Corrosion-proof containers, hermetic sealing based on rugged glass-to-metal seals and TIG or laser welds, built-in safety vents and individual protection fuses are design features common to most of Saft's lithium cells.

The LS/LST/LSX/LSH/G/LO/LM cells are available as single units (with different optional finishes) or assembled within battery packs.

Whatever your application, you will probably find a Saft lithium battery able to meet your particular requirements. If not, custom-made solutions can be developed within your time-to-market constraints.



Saft primary lithium batteries: applications

	Memory back-up	Real-time clocks	Utility metering AMR	Security Alarms	Electronic toll collection	Automotive electronics	Radio communication	Emergency location Buoys	Lighting Night vision	Medical defibrillators	Downhole logging	Meteorology Space	Professional electronics	GPS/GSM tracking
LM buttons	●	●		○									●	
LM spirals			○	●		●	●	●	●	●		●	●	●
LS, LST small bobbins (½ AA, AA, ¾ A, A)	●	●	●	●	●	●		●	●		●		●	●
LS large bobbins (C, D)	●		●	●		○		●	●		○	●	●	
LSH spirals			○	●		○	●	●	●		●	●	●	●
LSX small coils (AA)			●	●	●	●			●				●	
G/LO spirals			○	●		●	●	●	●	●		●	●	●

● recommended

○ possible

Key features

Primary cells and batteries are not rechargeable.

- **High and stable operating voltage**
 - Above 3 V for LS/LST/LSX/LSH cells.
 - Above 2 V for LO/G/LM cells.
- **Wide current capability range**

From a few microamperes base current for the LM buttons and small LS/LST cells to more than 10 A pulses for some LO, G, and LM cells.
- **Wide operating temperature range**

From – 60°C up to +85°C depending on cell type, current drain and environment conditions.
- **Long shelf life**

Capacity loss in storage at +20°C below 1% (LS, LST, LM), 2% (LSX) and 3% (LSH, G, LO) per year.
- **Extended operating life**

Typically above 5 years, and up to 15 years for some applications.
- **High energy densities**

3-10 times greater than the non-lithium systems.
- **Disposal**

According to local regulations.
- **Adequate safety**

Most of Saft's lithium cells are UL (Underwriters Laboratories) recognized, non-restricted for transport and EN 50020 approved. Most battery packs comply with European and US Army standards.
- **Storage**

The storage area should be clean, cool (not exceeding +30°C), dry and ventilated.

Saft primary lithium chemistries: specific qualities

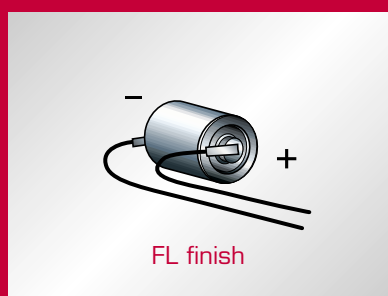
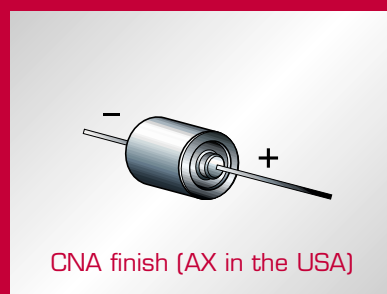
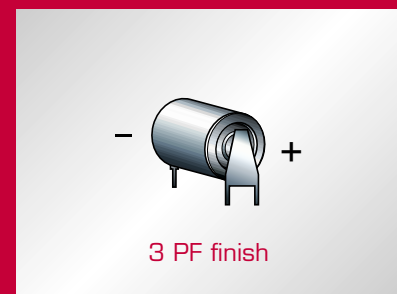
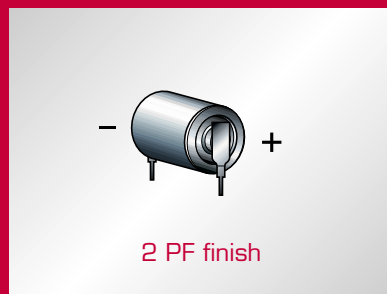
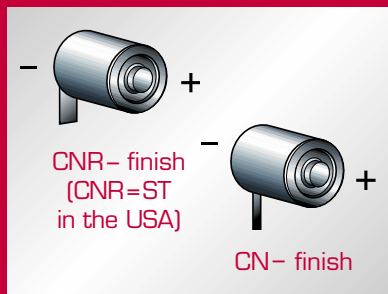
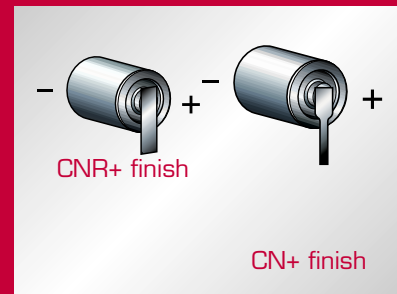
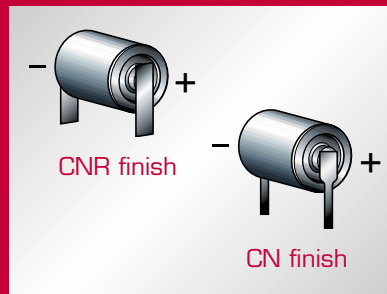
- **Li-SOCl₂** (LS, LST, LSX, LSH cell series)
 - Operating voltage > 3 V
 - Ability to operate from
 - 60 to +85°C
 - Non-flammable electrolyte
 - Cells non-pressurized at room temperature
 - Hermeticity guaranteed up to +110°C
 - Unrivalled nominal capacities (LS, LST)
 - ▶ “C” cell versions are recommended for use in Cool environments, typical of indoor applications. They yield higher voltage during pulsing at temperature not exceeding repeatedly +55°C.
 - ▶ “W” cell versions are recommended for use in applications with Widely fluctuating temperature (up to +95°C), such as electronic toll collect.
 - ▶ “SHX” cell versions offer superior pulse capability for discharges not exceeding the declared voltage cut-off.
- **Li-SO₂** (G, LO cell series)
 - Non-flammable electrolyte
 - Superior pulse capability
 - Excellent capacity above 1 A
 - Superior power at – 40°C
 - Hermeticity guaranteed up to +95°C
 - Wide military acceptance
- **Li-MnO₂** (LM cell series)
 - Non-corrosive electrolyte
 - Cells non-pressurized at room temperature
 - Spiral cells with good pulse capability
 - Minimal voltage delay
 - Competitive capacity at high current and low temperature (– 40°C)

Saft lithium cell series: performance data

Enclosed data relates to batteries aged up to 12 months and properly stored. Consult Saft regarding specific pulse conditions or usage following prolonged storage and/or exposure to extreme temperatures.

- Nominal capacity at +20°C and 2 V discharge cut-off (continuous current).
- Maximum recommended continuous current:
 - LS/LST/LSX bobbin and coiled cells : the current providing 50% of the nominal capacity at +20°C and 2 V cut-off.
 - LSH/G/LO/LM spirals : the above definition or the current that keeps the cells self-heating within safe limits, whichever is smaller.
- Maximum recommended pulse current : varies according to pulse characteristics (duration, frequency), temperature conditions, cell storage conditions prior to usage and the application's acceptable minimum voltage. The use of parallel capacitor to enhance the voltage at the beginning of pulses might be recommended. Consult Saft.
- Transport status: according to UN model Regulations Ref. ST/SG/AC.10/1 Revision 13 (2003) and Manual of Tests and Criteria Ref. ST/SG/AC.10/11 Revision 3, Amendment 1 “Lithium Batteries” – 2002.

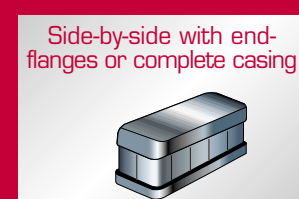
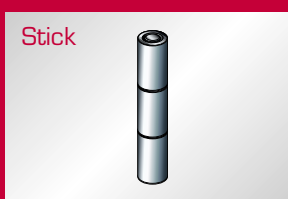
Examples of standard individual cell tabbing arrangements



Other cell finishes are available upon request

Check availability and dimensions of tabbing arrangement for considered cell

Examples of standard battery packs configurations



Exceptional performance







Saft
Specialty Battery Group
12, rue Sadi Carnot
93170 Bagnole - France
Tel:+33 1 49 93 19 18
Fax:+33 1 49 93 19 69

www.saftbatteries.com

Doc N° 31048-2-0205
Edition: February 2005

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Published by the Communications department.

Photo credit: ABB, Alvey and Towers, Berlin Heart, Colibri, Corbis, Creatas, The Defence Picture Library, Digital Vision, The Flight Collection, Getty Images, Photodisc, Saft.

Société anonyme au capital de 31 944 000 € RCS Bobigny B 383 703 873

Produced by Arthur Associates Limited.



SAFT

Primary lithium batteries

Li-SOCl₂ range



Li-SOCl₂ cells

Production site	Size	Open circuit voltage	Nominal voltage	Nominal capacity* (drain)	Maximum recommended continuous current	Operating temperature range	Outside diameter max.	Height max.	Weight	UL recognition	Transport status
-----------------	------	----------------------	-----------------	---------------------------	----------------------------------------	-----------------------------	-----------------------	-------------	--------	----------------	------------------

Small LS/LST/LSX cells

LS 14250	F	1/2 AA	3.67 V	3.6 V	1.1 Ah (1 mA)	40 mA	-60/+85°C**	14.65 mm	24.8 mm	8.9 g	yes	Non-restricted
LST 14250	UK	1/2 AA	3.67 V	3.6 V	1.1 Ah (1 mA)	40 mA	-60/+85°C**	14.4 mm	25.1 mm	9.4 g	yes	Non-restricted
LS 14250C	F	1/2 AA	3.67 V	3.6 V	1.2 Ah (1 mA)	15 mA	-60/+55°C**	14.65 mm	24.8 mm	8.9 g	yes	Non-restricted
LS 14500	F	AA	3.67 V	3.6 V	2.25 Ah (1 mA)	100 mA	-60/+85°C**	14.65 mm	50.3 mm	16.2 g	yes	Non-restricted
LST 14500	UK	AA	3.67 V	3.6 V	2.25 Ah (1 mA)	100 mA	-60/+85°C**	14.4 mm	49.8 mm	17.4 g	yes	Non-restricted
LS 14500C	F	AA	3.67 V	3.6 V	2.7 Ah (1 mA)	25 mA	-60/+55°C**	14.65 mm	50.3 mm	16.2 g	yes	Non-restricted
LS 14500W	F	AA	3.67 V	3.6 V	2.2 Ah (1 mA)	60 mA	-60/+95°C**	14.65 mm	50.3 mm	16.2 g	yes	Non-restricted
LSX 14500	F	AA	3.67 V	3.6 V	2.1 Ah (1 mA)	150 mA	-60/+85°C**	14.65 mm	50.3 mm	17.5 g	yes	Non-restricted
LST 17330	UK	2/3 A	3.67 V	3.6 V	2.1 Ah (2 mA)	25 mA	-60/+85°C**	16.5 mm	33.4 mm	14.4 g	yes	Non-restricted
LS 17500	F	A	3.67 V	3.6 V	3.4 Ah (3 mA)	150 mA	-60/+85°C**	17.0 mm	50.9 mm	21.9 g	yes	Non-restricted

* 2 V cut-off

** Cells leakproof up to +120°C

Large LS cells

LS 26500	F	C	3.67 V	3.6 V	7.7 Ah (4 mA)	150 mA	-60/+85°C**	26.0 mm	49.1 to 50.4 mm***	48 g	yes	Class 9
LS 33600	F	D	3.67 V	3.6 V	17.0 Ah (5 mA)	250 mA	-60/+85°C**	33.4 mm	60.2 to 61.6 mm***	90 g	yes	Class 9
LS 33600C	F	D	3.67 V	3.6 V	18.5 Ah (1 mA)	80 mA	-60/+55°C**	33.4 mm	60.2 to 61.6 mm***	90 g	yes	Class 9

* 2 V cut-off

** Cells leakproof up to +110°C

*** Depending on cell finish

LSH spiral cells

LSH 26180	F	1/3 C	3.67 V	3.6 V	1.2 Ah (10 mA)	400 mA	-60/+85°C**	26.2 mm	18.6 mm	24 g	—	Non-restricted
LSH 14	F	C	3.67 V	3.6 V	5.5 Ah (15 mA)	1300 mA	-60/+85°C**	26.0 mm	50.4 mm	51 g	yes	Class 9
LSH 14 "light"	F	C	3.67 V	3.6 V	3.6 Ah (15 mA)	1300 mA	-60/+85°C	26.0 mm	50.4 mm	51 g	—	Non-restricted
LSH 20	F	D	3.67 V	3.6 V	13.0 Ah (15 mA)	1800 mA	-60/+85°C**	33.4 mm	61.6 mm	100 g	yes	Class 9

* 2 V cut-off

** Cells leakproof up to +110°C

All LSH cells are fitted with individual 5 Amp fuse protection

Primary cells and batteries are not rechargeable.

Li-SOCl₂ Military battery packs

	Cell type construction*	Open circuit voltage	Nominal voltage	Voltage cut-off	Rated capacity	Maximum dimensions	Weight	Safety features	NATO stock number	Typical applications
PS 31 A	1s1p LSH 26180	3.67 V	3.5 V	2 V	1.2 Ah	26.2 x 18.9 mm	25 g	5 A fuse	6135-14-376-4875	Night vision
PS 38 A	5s1p LSH 26180	18 V	17.5 V	10 V	1.2 Ah	110.7 x 37 mm	155 g	5 A fuse	6135-14-389-9050	Laser telemetry
PS 40 A	4s1p LSH 14	14.7 V	14 V	10 V	4.6 Ah	108 x 65 x 49 mm	285 g	PTC 1.1 A**	6135-14-420-1760	Radiocommunication (TRPP 11/13)
PS 42 A	2s1p LSH 20	7.3 V	7 V	5 V	9.0 Ah	69.9 x 67.2 x 34 mm	230 g	PTC 3.5 A**	6135-14-434-0766	Radiocommunication (TRPP 39)
PS 48 B	5s2p LSH 20	18.3 V	17.5 V	12.6 V	18.0 Ah	212.4 x 72.7 x 68.5 mm	1150 g	PTC 1.85 A**	6135-14-451-7198	Radiocommunication (TRC 350)
PS 52 A	2s1p LSH 20	7.3 V	7.2 V	5 V	12.5 Ah	77.5 x 63.5 x 34.6 mm	225 g	PTC 2.0 A**	6135-14-459-9265	Radiocommunication (Portable PR4G)
PS 53 B	6s1p LSH 20	22 V	21 V	15 V	12.5 Ah	210.5 x 68.5 x 37.5 mm	720 g	PTC 2.5 A**	6135-14-459-9266	Radiocommunication (Portable PR4G)

* Xs Yp = Y parallel branches of X cells in series per branch

** Maximum hold current

Primary cells and batteries are not rechargeable.

This data sheet is an insert part of the **Primary lithium batteries Selector guide (ref 31048-2)**, where complementary information and data on features, safety and storage can be found.

Saft
Specialty Battery Group
 12, rue Sadi Carnot
 93170 Bagnolet – France
 Tel:+33 1 49 93 19 18
 Fax:+33 1 49 93 19 69

www.saftbatteries.com

Doc N° 31049-2-0205

Edition: February 2005

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Single cells mentioned in this document may have their own specific data sheet with complementary data. Please check website.

Published by the Communications Department.

Photo credit: Saft.

Société anonyme au capital de 31 944 000 € RCS Bobigny B 383 703 873

Produced by Arthur Associates Limited.



Primary lithium batteries

Li-SO₂ range



Li-SO₂ cells

Production site	Size	Open circuit voltage	Nominal voltage	Nominal capacity (drain)	Maximum recommended continuous current	Operating temperature range	Outside diameter max.	Height max.	Weight	UL recognition	Transport status
-----------------	------	----------------------	-----------------	--------------------------	----------------------------------------	-----------------------------	-----------------------	-------------	--------	----------------	------------------

G/LO spiral cells

G 04/3	UK	1/2 AA	3 V	2.9 V	450 mAh (50 mA)	250 mA	-60/+70°C*	14.2 mm	27.9 mm	8 g	-	Non-restricted
G 06/2	UK	AA	3 V	2.9 V	950 mAh (100 mA)	1000 mA	-60/+70°C*	14.2 mm	50.3 mm	15 g	-	Non-restricted
G 32/3	UK	2/3 A	3 V	2.9 V	800 mAh (80 mA)	750 mA	-60/+70°C*	16.3 mm	34.5 mm	12 g	-	Non-restricted
G 36/2	UK	"long" A	3 V	2.9 V	1700 mAh (100 mA)	1500 mA	-60/+70°C*	16.3 mm	57.7 mm	18 g	-	Non-restricted
LO 34 SX	USA	1/3 C	3 V	2.9 V	860 mAh (80 mA)	1000 mA	-60/+70°C*	25.9 mm	20.3 mm	18 g	yes	Non-restricted
LO 35 SX	USA	2/3 C	3 V	2.9 V	2000 mAh (120 mA)	2000 mA	-60/+70°C*	25.9 mm	35.9 mm	30 g	yes	Class 9
G 52/3	UK	C	3 V	2.9 V	3200 mAh (1000 mA)	2500 mA	-60/+70°C*	25.6 mm	49.5 mm	47 g	-	Class 9
LO 29 SHX	USA	C	3 V	2.9 V	3750 mAh (270 mA)	2500 mA	-60/+70°C*	25.9 mm	50.4 mm	40 g	yes	Class 9
G 54/3	UK	5/4 C	3 V	2.9 V	5000 mAh (200 mA)	2500 mA	-60/+70°C*	25.6 mm	60.2 mm	58 g	-	Class 9
LO 43 SHX	USA	5/4 C	3 V	2.9 V	5000 mAh (200 mA)	2500 mA	-60/+70°C*	25.9 mm	59.3 mm	53 g	yes	Class 9
LO 40 SHX	USA	2/3"Thin"D	3 V	2.9 V	3500 mAh (120 mA)	2000 mA	-60/+70°C*	29.1 mm	41.6 mm	40 g	yes	Class 9
LO 30 SHX	USA	"Thin"D	3 V	2.9 V	5750 mAh (200 mA)	3000 mA	-60/+70°C*	29.1 mm	59.9 mm	63 g	yes	Class 9
G 20/2	UK	D	3 V	2.9 V	7750 mAh (250 mA)	3000 mA	-60/+70°C*	33.3 mm	61.0 mm	88 g	-	Class 9
LO 26 SX	USA	D	3 V	2.9 V	7750 mAh (250 mA)	3000 mA	-60/+70°C*	34.2 mm	59.3 mm	85 g	yes	Class 9
LO 26 SXC	USA	D	3 V	2.8 V	9200 mAh (250 mA)	2500 mA	-60/+70°C*	34.2 mm	59.3 mm	85 g	-	Class 9
LO 26 SHX	USA	D	3 V	2.9 V	7500 mAh (1000 mA)	4000 mA	-60/+70°C*	34.2 mm	59.3 mm	85 g	yes	Class 9
LO 25 SX	USA	"Fat"D	3 V	2.9 V	8000 mAh (270 mA)	2500 mA	-60/+70°C*	39.5 mm	50.3 mm	96 g	yes	Class 9
LO 39 SHX	USA	F	3 V	2.9 V	11000 mAh (300 mA)	3000 mA	-60/+70°C*	30.7 mm	99.4 mm	125 g	yes	Class 9
G 22/6	UK	DD	3 V	2.9 V	16500 mAh (500 mA)	3000 mA	-60/+70°C*	33.3 mm	120.6 mm	175 g	-	Class 9
G 62/1	UK	"Long Fat DD"	3 V	2.9 V	34000 mAh (1000 mA)	3000 mA	-60/+70°C*	41.7 mm	141.0 mm	300 g	-	Class 9

* Cells leakproof up to +95°C

Primary cells and batteries are not rechargeable.

Li-SO₂ Military battery packs

Cell type construction*	Open circuit voltage	Nominal voltage	Voltage cut-off	Rated capacity	Maximum dimensions	Weight	NATO stock number	Typical applications	
BA 5112/U	4s1p LO 35 SX	11.8 V	11.2 V	8 V	2.0 Ah	77.8 x 57.2 x 39.1 mm	180 g	6135-01-235-4168	Radiocommunication (PRC 112)
BA 5557/U	5s2p LO 35 SX	14.7 V/ 29.5 V	14 V/ 28 V	10 V/ 20 V	4 Ah/2 Ah	100.1 x 106.3 x 37.3 mm	500 g	6135-01-088-2707	Radiocommunication
BA 5567/U	1s1p LO 34 SX	2.95 V	2.9 V	2 V	0.86 Ah	25.9 x 19.9 mm	16 g	6135-01-090-5363	Night vision
BA 5588/U	5s1p LO 40 SX	14.7 V	14 V	10 V	3.5 Ah	96 x 90 x 31 mm	295 g	6135-00-088-2708	Radiocommunication (PRC 128)
BA 5590/U (2 sets of terminals)	5s2p LO 26 SX	14.7 V 29.5 V	14 V 28 V	10 V 20 V	7.5 Ah 15.0 Ah	127 x 111.8 x 62 mm	1020 g	6135-01-036-3495	Radiocommunication (PRC 104/119)
BA 5598/U	5s1p LO 25 SX	14.7 V	14 V	14 V	8.0 Ah	120.7 x 92 x 54 mm	680 g	6135-01-034-2239	Radiocommunication (PRC 25/74/77)
BA 5599/U	3s1p LO 26 SX	8.8 V	8.4 V	6 V	7.5 Ah	152 x 38 x 64 mm	450 g	6135-01-034-2239	Radio tester
BA 5600/U	3s1p LO 26 SX	8.8 V	8.4 V	4 V	7.5 Ah	185.9 x 39.4 mm	360 g	6135-01-168-2944	Communication terminal AN/PSC 2/cap
BA 5790/U	5s1p LO 26 SX	14.7 V	14 V	10 V	7.5 Ah	186.5 x 35.7 x 66.7 mm	630 g	N/A	Radiocommunication
BA 5791/U	5s2p LO 26 SX	14.7 V	14 V	10 V	15 Ah	186.5 x 70.0 x 65.3 mm	1.2 kg	N/A	Radiocommunication
BA 5800/U	2s1p LO 26 SX	5.9 V	5.6 V	4 V	7.5 Ah	128.5 x 35.5 mm	220 g	6135-99-798-9851	Compact Air Supply Unit (CASU), GPS
BA 5847/U	2s1p LO 26 SX	5.9 V	5.4 V	4 V	7.5 Ah	95 x 64.8 x 38 mm	240 g	6135-01-090-5364	Radiocommunication Mine detector
BT 5313/U	9s1p LO 26 SX	26.5 V	25.2 V	18 V	7.2 Ah	Special	1.1 kg	N/A	Missile launcher
Li/3	3s1p LO 26 SX	8.8 V	8.4 V	6 V	7.5 Ah	110 x 42 x 26.2 mm	450 g	6135-14-383-9768	Missile launcher
G6-104 (/C,D,E,F,G,H)	2s1p G20	5.9 V	5.6 V	4 V	7.5 Ah	128.5 x 35.5 mm	200 g	-	CAM
G6-105	2s1p G52	5.9 V	5.6 V	4 V	3.2 Ah	55 x 28.1 x 56 mm	110 g	6135-99-658-9085	Aircraft probe
G9-124	3s1p G20	8.8 V	8.4 V	6 V	7.5 Ah	110 x 42 x 83 mm	370 g	6135-14-383-9768	Missile
G15-114	5s2p G06	14.7 V	14 V	9.6 V	1.9 Ah	90.6 x 40.3 x 71 mm	270 g	6135-99-795-4351	Radiocommunication
G15-127	2 x 5s1p G62	2x14.7 V	2x14 V	2x10 V	34 or 68 Ah	216 x 152 x 92 mm	3.5 kg	6135-99-794-2896	-
G18-115	6s1p G20	17.5 V	16.8 V	12 V	7.5 Ah	131.6 x 66.8 x 128 mm	0.85 kg	6135-99-795-4350	Radiocommunication
G30-101	10s1p G20	29.3 V	28 V	20 V	7.5 Ah	184.5 x 73.5 x 80 mm	1.5 kg	6135-99-747-4430	Radiocommunication
G30-102/B	10s1p G22	29.3 V	28 V	20 V	16 Ah	184 x 72.5 x 133 mm	2.5 kg	6135-99-840-0109	Radiocommunication
XSG 1493/1	5s1p G32	14.7 V	14 V	10 V	0.85 Ah	78.5 x 37.2 x 40 mm	170 g	-	Personal locator beacon

* Xs Yp = Y parallel branches of X cells in series per branch

Primary cells and batteries are not rechargeable.

This data sheet is an insert part of the Primary lithium batteries Selector guide (ref 31048-2), where complementary information and data on features, safety and storage can be found.

Saft
Specialty Battery Group
 12, rue Sadi Carnot
 93170 Bagnolet – France
 Tel:+33 1 49 93 19 18
 Fax:+33 1 49 93 19 69

www.saftbatteries.com

Doc N° 31050-2-0604
 Edition: June 2004

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Single cells mentioned in this document may have their own specific data sheet with complementary data. Please check website.

Published by the Communications Department.

Photo credit: Saft.

Société anonyme au capital de 31 944 000 € RCS Bobigny B 383 703 873

Produced by Arthur Associates Limited.



Primary lithium batteries

Li-MnO₂ range



Li-MnO₂ cells

Production site	Size	Open circuit voltage	Nominal voltage	Nominal capacity (drain)	Maximum recommended continuous current	Operating temperature range	Outside diameter max.	Height max.	Weight	UL recognition	Transport status
-----------------	------	----------------------	-----------------	--------------------------	----------------------------------------	-----------------------------	-----------------------	-------------	--------	----------------	------------------

LM button cells

LM 2032	F	20x3.2mm	3.3 V	3 V	235 mAh (0.2 mA)	3 mA	-20/+60°C	20.0 mm	3.2 mm	2.9 g	yes	Non-restricted
LM 2430	F	24.5x3mm	3.3 V	3 V	285 mAh (0.2 mA)	3 mA	-20/+60°C*	24.5 mm	3.0 mm	4.0 g	yes	Non-restricted
LM 2450	F	24.5x5mm	3.3 V	3 V	540 mAh (0.2 mA)	3 mA	-20/+60°C	24.5 mm	5.0 mm	6.0 g	yes	Non-restricted

* Operating temperature range extended to -20/+70°C for the resin-encapsulated Memoguard 40 LH or LF 220 versions

LM spiral cells

LM 17130	USA	1/3 A	3.3 V	3 V	500 mAh (4.5 mA to 2.0 V)	300 mA	-40/+70°C*	16.7 mm	16.6 mm	8.0 g	—	Non-restricted
LM 22150	USA	1/3 sub-C	3.3 V	3 V	900 mAh (40 mA to 2.0 V)	400 mA	-40/+70°C*	22.8 mm	17.3 mm	15.0 g	—	Non-restricted
LM 26500	UK	C	3.3 V	3 V	4500 mAh (500 mA)	1000 mA	-40/+70°C*	25.6 mm	51.0 mm	60 g	---	Class 9
LM 26600	UK	5/4 C	3.3 V	3 V	5500 mAh (500 mA)	1200 mA	-40/+70°C*	25.6 mm	61.5 mm	72 g	—	Class 9
LM 33570	UK	"short" D	3.3 V	3 V	9000 mAh (1000 mA)	3000 mA	-40/+70°C*	34.0 mm	57 mm	107 g	—	Class 9
LM 33600	UK	D	3.3 V	3 V	10500 mAh (1000 mA)	3000 mA	-40/+70°C*	34.0 mm	61.3 mm	116 g	—	Class 9

* Cells leakproof up to +80°C

Li-MnO₂ Military battery packs

Cell type construction*	Open circuit voltage	Nominal voltage	Voltage cut-off	Nominal capacity	Maximum dimensions	Weight	NATO stock number	Typical applications
-------------------------	----------------------	-----------------	-----------------	------------------	--------------------	--------	-------------------	----------------------

BA 5368/U	4s1p LM 22150	13.2 V	12 V	9 V	900 mAh	76.2 x 26.9 mm	145 g	6135-01-455-7947	Radiocommunication (PRC-90-103-106-195)
BA 5372/U	2s1p LM 17130	6.6 V	6 V	4 V	500 mAh	16.5 x 33.0 mm	20 g	6135-01-214-6441	Radiocommunication (SINGARS)

* Xs Yp = Y parallel branches of X cells in series per branch

Primary cells and batteries are not rechargeable.

This data sheet is an insert part of the **Primary lithium batteries Selector guide (ref 31048-2)**, where complementary information and data on features, safety and storage can be found.

February 2005

Saft
Specialty Battery Group
 12, rue Sadi Carnot
 93170 Bagnolet – France
 Tel: +33 1 49 93 19 18
 Fax: +33 1 49 93 19 69

www.saftbatteries.com

Doc N° 31051-2-0205

Edition: February 2005

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Single cells mentioned in this document may have their own specific data sheet with complementary data. Please check website.

Published by the Communications Department.

Photo credit: Saft.

Société anonyme au capital de 31 944 000 € RCS Bobigny B 383 703 873

Produced by Arthur Associates Limited.



Serving your needs around the world

Saft Lithium Battery Group sales network

Australia

Saft Australia Pty Ltd
Unit 18/167 Prospect Highway,
Seven Hills, NSW 2147
Tel +61 3 9465 5734
Fax +61 3 9465 6213
gary.piper@saftbatteries.com.au

China

Saft Hong Kong Ltd
Unit 1107-9, 11/F, Westin Centre
26 Hung To Road,
Kwun Tong, Kowloon
Tel +852 2796 9932
Fax +852 2798 0619
ivan.lam@saftbatteries.com

Alcatel Telecom Equipment
(Shanghai) Co. Ltd,
39 # No. 275 Basheng Road,
Waigaoqiao Free Trade Zone,
Shanghai 200131
Tel +86 21 586 66405
Fax +86 21 586 66403
ben.li@saft.com.hk

France

Saft
12, rue Sadi Carnot
93170 Bagnolet
Tel +33 (0) 1 49 93 19 18
Fax +33 (0) 1 49 93 19 69
lithiumsales.fr@saftbatteries.com

Germany

Saft Batterien GmbH
Löffelholzstr. 20
90441 Nürnberg
Tel +49 911 941740
Fax +49 911 426144
ecaterina.hauser@saftbatteries.com

Israel

Saft
Vita Towers
11 Ben Gurion Street
Bnei-Brack 51260
Tel +972 3 6160633
Fax +972 3 6160635
amnon.dor@saftbatteries.com

Italy

Saft Batterie Italia S.r.l.
Palazzo Cimabue, Via Cassanese, 224
20090 Segrate - Milano
Tel +39 02 89 28 07 45
Fax +39 02 89 28 07 62
cesare.giuggioli@saftbatteries.com

Netherlands

Saft Batterijen B.V.
Crown Business Center Unit B32
A.Hofmanweg 5A
2031 BH Haarlem
Tel +31 23 7505 721
Fax +31 23 7505 725
cor.matser@saftbatteries.com

Norway

Saft AS
Grini Naeringspark 1
N-1361 Osteraa
Tel +47 6716 4163
Fax +47 6716 4170
aage.arnesen@saftbatteries.com

Russian Federation

Saft
Petrovka str. 5,
103031 Moscow
Tel +7 (095) 937 09 67
Fax +7 (095) 937 09 06
dmitry.lozin@alcatel.ru

Singapore

Saft Singapore Pte Ltd
54 Genting Lane
#03-02 Ruby Land Complex Block II
Singapore 349562
Tel +65 6512 15 04
Fax +65 6746 67 72
colin.chan@saft.com.sg

Spain/Portugal

Saft Baterias S.L.
Avda. Fuente Nueva 12, Nave 15
San Sebastian de los Reyes
28700 Madrid, Spain
Tel +34 916 593 480
Fax +34 916 593 490
jose-maria.carrasco@saftbatteries.com

Sweden

Saft AB (Civil Business)
Jungnergatan - Box 709
SE - 572 28 Oskarshamn
Tel +46 491 681 04
Fax +46 491 680 85
helena.drehmer@saftbatteries.com

Saft AB (Military Business)

Illervägen 6
SE-35245 Växjö
Tel +46 470 452 47
Fax +46 470 452 57
bengt.bengtsson@saftbatteries.com

United Kingdom/Ireland

Saft Ltd
River Drive
South Shields Tyne & Wear
NE33 2TR - UK
Tel +44 191 456 1451
Fax +44 191 456 6383
angela.wright@saftbatteries.com

USA/Canada/Mexico

Saft America Inc.
313, Crescent Street
Valdese, NC 28690 - USA
Tel +1 828 874 41 11
Fax +1 828 874 24 31
lithiumsales.us@saftbatteries.com

Saft Lithium Battery Group manufacturing sites

France

Saft
Rue Georges Leclanché
B.P. N° 1039
86060 Poitiers Cedex 09
Tel +33 (0) 5 49 55 48 48
Fax +33 (0) 5 49 55 48 50
lithiumsales.fr@saftbatteries.com

United Kingdom

Saft Ltd.
River Drive
South Shields Tyne & Wear
NE33 2TR
Tel +44 191 456 1451
Fax +44 191 456 6383
angela.wright@saftbatteries.com

USA

Saft America Inc.
313, Crescent Street
Valdese, NC 28690
Tel +1 828 874 41 11
Fax +1 828 874 24 31
lithiumsales.us@saftbatteries.com

Saft Lithium Battery Group sales agents

Argentina

CH Sistemas Electronicos
2758 Av. Cordoba
1187 Buenos Aires
Tel +54 11 49 62 16 25
Fax +54 11 49 62 16 27
info@ch-sistemas.com.ar

Probattery

Baires Full Trading
Paz Soldán 4960 C1427DSF
Buenos Aires
Tel +54 11 45 14 68 68
Fax +54 11 45 14 68 66
gfreund@probattery.com.ar

Austria

Otto Sauseng GmbH
Lienfeldergasse 32
A-1160 Wien
Tel +43 1 485 86 11 0
Fax +43 1 485 86 11 21
office@sauseng.at

Belgium/Luxembourg

Helpelec
Avenue du Couronnement, 11
B-1200 Brussels - Belgium
Tel +32 2 7 62 33 38
Fax +32 2 7 62 37 01
info@helpelec.be

Brazil

Barasch Sylmar
R. Guaicurus, 345
Lapa, Sao Paulo,
SP 05033-000
Tel +55 11 3864 6366
Fax +55 11 3864 6366
barasch@uol.com.br

Czech Republic

Bateria Slany
Netovicka 875
27401 Slany
Tel +420 312 522 849
Fax +420 312 522 868
george@bateria.cz

Denmark

Scansupply A/S
Blokken 44
DK-3460 Birkerød
Tel +45 45 82 50 90
Fax +45 45 82 54 40
flemming@scansupply.dk

Egypt

Elmetra
47, Ahmed Taysir str.
Ramo Tower B #104
Heliopolis 11341 Cairo
Tel +20 2 26 21 864
Fax +20 2 40 31 195
khaled.saad@elmetra-eg.com

Finland & Baltic countries

HansaBattery Oy
Ruukintie 20 C
02330 Espoo
Tel +358 9 2606 5290
Fax +358 9 2606 5299
hans.sandstrom@hansabattery.fi

Hungary

Kapacitas
Szentpetery u. 24-26
H-1115 Budapest
Tel +36 1 463 08 88
Fax +36 1 463 08 99
varga@akku.hu

Japan

Sumitomo Corp.
Triton Square Z
1 - 8 - 12, Harumi 1 Chuo-ku
Tokyo 104 - 6222
Tel +81 3 5144 9080
Fax +81 3 5144 9267
haruyuki.tabuchi @sumitomocorp.co.jp

Korea

Cellcom Co Ltd
195-42 Anyang 7-Dong
Manan-Ku, Anyang City
Kyunggi-Do 430017
Tel +82 31 441 1134
Fax +82 31 441 1139
central@cellcomkorea.com

Poland

Wamtechnik
19, Czajewicza Street
5-500 Piaseczno
Tel +48 22 75 02 142
Fax +48 22 75 02 139
pwlodarczyk@wamtechnik.com.pl

Romania

Sprinter 2000 SA
Calea Feldioarei, nr 60
Brasov 2200,
Tel +40 268 472 333
Fax +40 268 472 334
sprinter@deltanet.ro

Saudi Arabia & Middle East

Dar Al Fursan
PO Box 16221, Riyadh 11464
Tel +966 1 462 08 16
Fax +966 1 462 08 16
nader.altaher@daralfursan.com

South Africa

Uniross Batteries (PTY) Ltd
Pretoria West PO Box 28861
Sunnyside 0132
Tel +27 12 327 32 66
Fax +27 12 327 32 94
sales@uniross.com

Switzerland

Leclanché SA
48, Avenue de Grandson
CH-1401 Yverdon-Les-Bains
Tel +41 24 44 72 299
Fax +41 24 44 72 230
rene.bissat@leclanche.ch

Turkey

Gestas AS
Florya is Merkezi K.2
34 630 Sefaköy-Istanbul
Tel +90 212 624 52 29
Fax +90 212 599 30 68

For other countries, please send your batteries request to lithiumsales.fr@saftbatteries.com

Saft

Specialty Battery Group
12, rue Sadi Carnot
93170 Bagnolet - France
Tel: +33 1 49 93 19 18
Fax: +33 1 49 93 19 69

www.saftbatteries.com

Doc N° 31052-2-1004
Edition: October 2004

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

For more details on primary lithium technologies please refer to Primary Lithium Batteries Selector Guide Doc N° 31048-2-0604.

Published by the Communications Department.

Société anonyme au capital de 31 944 000 € RCS Bobigny B 383 703 873

Produced by Arthur Associates Limited.

