

Complete power solutions
Autonomy for fighters in the field



Saft battery solutions

Leading the way

Saft is a global, multi-technology battery specialist. We lead the world in providing the complete power systems required for today's sophisticated electronic battlefield equipment.

In the field, demands for more power, longer duration, increased strength and total reliability must not compromise soldier manoeuvrability and safety.

Saft is a single-source provider of lightweight, compact, robust and proven solutions. Our response is to co-ordinate power storage, electrical systems and charging into autonomous units with easy operation.

Our expertise lies in advancing precisely designed, cutting-edge technological solutions as part of our customers' strategic product development.



Worldwide capability

Saft has modern and highly efficient defence battery manufacturing sites in Poitiers and Nersac (France), South Shields (UK), Büdingen (Germany), Valdese and Cockeysville (USA). This capability is part of its international infrastructure of sales and support expertise.

Rapid response

Saft's global footprint enables the fastest response to any location as military needs dictate.



Multiple ranges, many needs

Saft markets an exceptionally wide variety of cutting-edge and mature battery technologies, including Li-SOCl₂, Li-SO₂, Li-MnO₂, Li-ion, Ni-Cd, and Ni-MH. These can be configured into optimised systems for many defence applications.

Reliable performance

- High energy density: the most energy for size and volume
- Long operating life
- High rate capability
- Lightweight: for improved agility
- No voltage delay: instant power, even following long storage
- Versatility of missions: same batteries for low and high temperature
- Long storage life: simple logistics
- Safety: no toxic compounds or heavy metals – hermetically sealed
- Reliability: security and survival

Durable, efficient, light

Powerful performance, preferred by soldiers

Military battery needs are varied and demanding. But total reliability is key –

- during prolonged exposure to arctic and desert conditions
- during missions and training exercises
- during transport and in operation

Saft produces the best battery systems for all military needs – low weight, robust, transportable.

Saft's optimised systems achieve peak performance and enable long, reliable application life. Customised power systems including design and manufacture of Primary and Rechargeable batteries, and charging equipment, are built to precise requirements. Total systems are supplied from a single source.

Applications and references

Autonomous applications depend on guaranteed reliability and durability. Major defence OEMs and prestigious military customers such as the French and German Armies, UK MoD, Australian Defence Forces, and the United States Armed Forces already choose the proven performance of Saft systems for:

- portable radio communications
- night vision equipment
- target acquisition and firing systems
- satellite positioning system
- computer encryption
- mine detection
- chemical agent monitoring
- memory back-up
- etc...

The future: Saft has arrived already

The quality of Saft's research and development is key to its technological leadership and commercial success.

The company is deeply involved in the Soldier Modernisation Program development through its participation in high profile initiatives such as

- Future Combat Systems, USA
- Felin, France
- ComFut, Spain.



Saft: a complete capability, including expertise in batteries...

Saft batteries for military markets are safe, low weight, high performance solutions that guarantee a reliable power source for the critical demands of modern applications. Look at our extensive range of technologies: a strong platform of high performance, simple portability and long lifetime factors. Saft can meet precisely the needs of your application.

Lithium systems (Li-SOCl₂, Li-SO₂, Li-MnO₂, Li-ion)

- highly efficient, compact and transportable autonomous power. Manufactured in France, UK, Germany and the USA, Saft's maintenance-free Lithium products operate even in extreme temperatures and provide high energy density at a low life cycle cost.

Nickel systems (Ni-Cd, Ni-MH)

- robust, mature, and proven to provide unfailing service. A vast range of possible configurations enables electrical and operational criteria to be met precisely, with minimal maintenance and maximum reliability. Long life, totally reliable solutions.

	Li-SOCl ₂ Bobbin	Li-SOCl ₂ Spiral	Li-SO ₂	Li-MnO ₂	Li-ion	Ni-Cd	Ni-MH	
Energy density	(Wh/L)	1220	860	490	560	380	150	250
	(Wh/Kg)	740	470	310	260	180	50	70
Voltage	(V)	3.6	3.6	3	3	3.75	1.2	1.2
Power capability		low	good	excellent	good	good	excellent	excellent
Performance	Low temp	good	good	excellent	moderate	good	good	moderate
	High temp	good	good	moderate	good	moderate	good	good
Passivation		moderate	moderate	moderate	low	n/a	n/a	n/a
Self discharge rate		very low	low	low	low	low	moderate	moderate
Operating temp. range		-40/+85°C	-40/+85°C	-40/+70°C	-30/+70°C	-40/+60°C	-40/+50°C	-20/+50°C
Fast moving conflict		•	•	•	•			
Training/peace-keeping						•	•	•



Strength in action

Winning solutions for military equipment

...and total, integrated systems

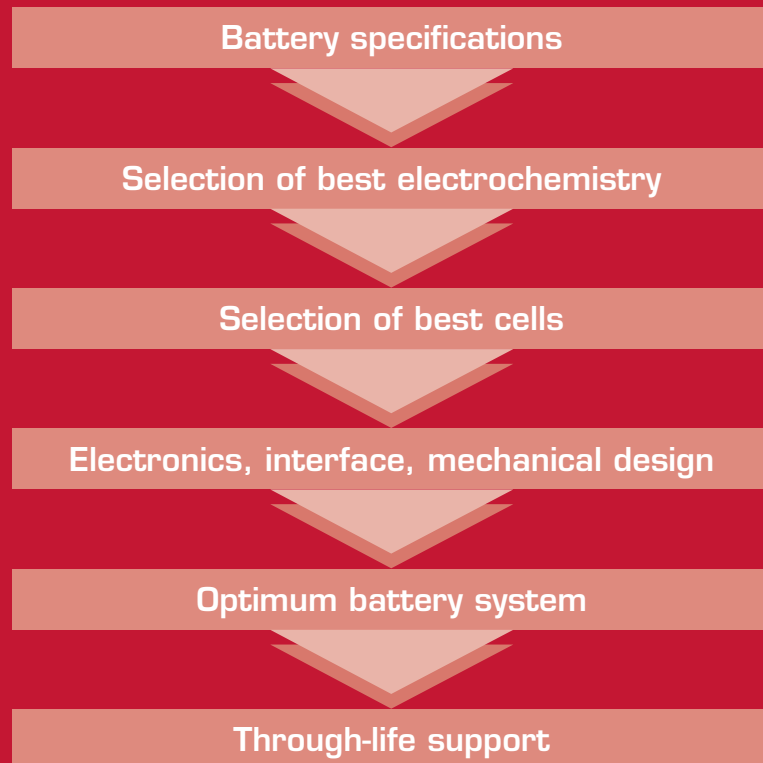
Fast, quiet and intuitive: Saft's intelligent, state-of-the-art charging equipment is rugged and built for the purpose of operations in the field.

Chargers

- Mobile and tactical multi-chemistry chargers recognise automatically battery types and chemistries and can charge batteries simultaneously in extreme operational conditions.
- Tactical lithium-ion chargers are compact, lightweight, soldier-portable units featuring two channel, two position technology providing totally dependable performance.



Saft's comprehensive programme management solution



About Saft

Saft is a world specialist in the design and manufacture of high-tech batteries for industry. Saft batteries are used in high performance applications such as industrial infrastructure and processes, transportation, space and defence. Saft is the world's leading manufacturer of nickel-cadmium batteries for industrial applications and of primary lithium batteries for a wide range of end markets. The group is also the European leader for specialised advanced technologies for the defence and space industries. With approximately 3,900 employees worldwide, Saft is present in 18 countries. Its 18 manufacturing sites and extensive sales network enable the group to serve its customers worldwide.

Saft Specialty Battery Group

12, rue Sadi Carnot
93170 Bagnolet – France
Tel: +33 (0)1 49 93 19 18
Fax: +33 (0)1 49 93 19 69

www.saftbatteries.com

Doc N° 32019-2-0907
Edition: September 2007

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

Photo credits: Department of Defense, Digital Vision, Program Executive Office Soldier, Saft, Thales.

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

Produced by Arthur Associates Limited.



SAFT

Soft batteries for military applications

Non-rechargeable batteries

Battery name	Chemistry	Nominal voltage (V)	Nominal capacity (Ah)	Operating temperature range	Weight (g)	Dimensions max. (mm) Height x Diameter Height x Width x Depth	Transport status	Nato Stock Nbr	Most typical application	Made in
BA 5112 A/U	Li-SO ₂	11.2	2.3	-40/+70°C	180	77.8 x 57.2 x 39.1	Class 9	6135-01-235-4168	Radiocommunication	USA
BA 5368/U	Li-MnO ₂	12.0	0.9	-40/+70°C	145	76.2 x 26.9	Non-restricted	6135-01-455-7947	Radiocommunication	USA
BA 5372/U	Li-MnO ₂	6.0	0.5	-40/+70°C	20	16.5 x 33.0	Non-restricted	6135-01-214-6441	Radiocommunication	USA
BA 5557 A/U	Li-SO ₂	14.0/28.0	4.4/2.2	-40/+70°C	500	100.1 x 106.3 x 37.3	Class 9	6135-01-088-2707	Radiocommunication	USA
BA 5567 A/U	Li-SO ₂	2.8	1.0	-40/+70°C	16	25.9 x 19.9	Non-restricted	6135-01-090-5363	Night vision goggles & Data entry device	USA
BA 5588 A/U	Li-SO ₂	13.5	3.5	-40/+70°C	295	96 x 90 x 31	Class 9	6135-00-088-2708	Radiocommunication	USA
BA 5590 A/U	Li-SO ₂	13.5/27.0	7.5/15.0	-40/+70°C	1020	127 x 111.8 x 62.2	Class 9	6135-01-523-3037	Radiocommunication*	USA
BA 5590 B/U (2 sets of terminals)	Li-SO ₂	13.5/27.0	7.5/15.0	-40/+70°C	1020	127 x 111.8 x 62.2	Class 9	6135-01-036-3495 6135-01-438-9450	Radiocommunication	USA
BA 5590 HC	Li-SO ₂	13.5/27.0	18.2/9.1	-40/+70°C	1000	127 x 111.8 x 62.2	Class 9	n/a	Radiocommunication	USA
BA 5598 A/U	Li-SO ₂	13.5	7.5	-40/+70°C	680	120.7 x 92 x 54	Class 9	6135-01-034-2239	Radiocommunication	USA
BA 5599 A/U	Li-SO ₂	8.1	7.5	-40/+70°C	450	152 x 38 x 64	Class 9	6135-01-069-8575	Radio tester	USA
BA 5600 A/U	Li-SO ₂	8.1	7.5	-40/+70°C	360	185.9 x 39.4	Class 9	6135-01-168-2944	Communication terminal	USA
BA 5800 A/U	Li-SO ₂	5.3	7.5	-40/+70°C	220	128.5 x 35.5	Class 9	6135-99-798-9851	Precision/Small lightweight GPS receiver Chemical	USA
BA 5847 B/U	Li-SO ₂	5.3	7.5	-40/+70°C	220	95 x 64.8 x 38	Class 9	6135-01-090-5364	Radiocommunication + Mine detector	USA
BT 5313	Li-SO ₂	25.2	7.2	-40/+70°C	1100	131 x 110 x 65	Class 9	n/a	Missile launcher	USA
BT 5790	Li-SO ₂	14.0	7.5	-40/+70°C	630	186.5 x 35.7 x 66.7	Class 9	n/a	Radiocommunication	USA
BT 5791	Li-SO ₂	14.0	15.0	-40/+70°C	1200	186.5 x 70.0 x 65.3	Class 9	n/a	Radiocommunication	USA
G 15-114	Li-SO ₂	14.0	1.9	-60/+70°C	270	90.6 x 40.3 x 71	Class 9	6135-99-795-4351	Clansman radio + other applications	UK
G 15-127	Li-SO ₂	2 x 14.0	34 or 68	-60/+70°C	3500	216 x 152 x 92	Class 9	6135-99-794-2896	Special forces	UK
G 18-115	Li-SO ₂	16.8	7.5	-60/+70°C	850	131.6 x 66.8 x 128	Class 9	6135-99-795-4350	Clansman radio + other applications	UK
G 30-101	Li-SO ₂	28.0	7.5	-60/+70°C	1500	184.5 x 73.5 x 80	Class 9	6135-99-747-4430	Clansman radio + other applications	UK
G 30-102/B	Li-SO ₂	28.0	16.0	-60/+70°C	2500	184 x 72.5 x 133	Class 9	6135-99-840-0109	Clansman radio + other applications	UK
G 6-104	Li-SO ₂	5.6	7.5	-60/+70°C	200	128.5 x 35.5	Class 9	6135-99-798-9851	Chemical agent monitor	UK
G 6-105	Li-SO ₂	5.6	3.2	-60/+70°C	110	55 x 28.1 x 56	Class 9	6135-99-658-9085	Aircraft probe	UK
G 9-124	Li-SO ₂	8.4	7.5	-40/+70°C	370	110 x 42 x 83	Class 9	6135-14-383-9768	Missile launcher	UK
Li/3	Li-SO ₂	8.4	7.5	-40/+70°C	450	110 x 42 x 26.2	Class 9	6135-14-383-9768	Milan MIRA missile launcher & Night vision	USA
PS 30A	Li-SOCl ₂	3.6	0.5	-60/+85°C	9.8	9.5 x 21	Non-restricted	6135-14-043-0231	Memory back-up	France
PS 31A	Li-SOCl ₂	3.6	1.2	-60/+85°C	25	26.2 x 18.9	Non-restricted	6135-14-376-4875	Night vision	France
PS 38A	Li-SOCl ₂	17.5	1.2	-60/+85°C	155	110.7 x 37	Non-restricted	6135-14-389-9050	Laser telemetry	France
PS 40A	Li-SOCl ₂	14.0	4.6	-60/+85°C	285	108 x 65 x 49	Class 9	6135-14-420-1760	Radiocommunication	France
PS 42A	Li-SOCl ₂	7.0	9.0	-60/+85°C	230	69.9 x 67.2 x 34	Class 9	6135-14-434-0766	Radiocommunication	France
PS 48B	Li-SOCl ₂	17.5	18.0	-60/+85°C	1150	212.4 x 72.7 x 68.5	Class 9	6135-14-451-7198	PR4G radiocommunication	France
PS 52A	Li-SOCl ₂	7.2	12.5	-60/+85°C	225	77.5 x 63.5 x 34.6	Class 9	6135-14-459-9265	Radiocommunication	France
PS 53B	Li-SOCl ₂	21.0	12.5	-60/+85°C	720	210.5 x 68.5 x 37.5	Class 9	6135-14-459-9266	Radiocommunication	France
PS 56B	Li-SOCl ₂	15.0	5.0	-60/+70°C	400	144 x 52 x 50	Class 9	6140-14-530-3381	Sophie thermal camera	France
6.M 20	Li-MnO ₂	18.0	10.5	-40/+70°C	750	191 x 72 x 38	Class 9	6135-12-309-8604	Radiocommunication (SEM 70)	Germany
XSG 1493/1	Li-SO ₂	14.0	0.85	tbd	170	78.5 x 37.2 x 40	tbd	tbd	Personal locator beacon	UK

* Features state of charge indicator



saft

Saft batteries for military applications

Rechargeable batteries

Battery name	Chemistry	Nominal voltage (V)	Nominal capacity (Ah)	Operating temperature range	Weight (g)	Dimensions max. (mm) Height x Diameter Height x Width x Depth	Transport status	Nato Stock Nbr	Most typical application	Made in
ALI 142 / BA 684A / 06544W	Li-ion	7.5	6.8/6.1	-30/+60°C	450	89 x 68 x 38	Class 9	98-34-384	PR4G radiocommunication	France
ALI 143 / BA 685A / 06571A	Li-ion	15.0	13.6/12.2	-20/+60°C	1700	259 x 79 x 73	Class 9	6140-14-529-5973	PR4G radiocommunication	France
ALI 146 / BA 639 / 08143Z	Li-ion	7.5	2.6	-20/+60°C	290	65 x 67.6 x 38.5	Non-restricted	tbd	PR4G radiocommunication	France
BAMS / 08273K	Li-ion	30.0	7.0	-30/+60°C	1700	213.8 x 75 x 68	Class 9	tbd	Radiocommunication	France
BB 2000 / 06582M / KDC	Li-ion	7.3	6.1	-30/+60°C	400	79.5 x 79 x 46.5	Class 9	6140-25-149-7972	KDC Radio	France
BB 2500 / 08068W / KDC	Li-ion	14.6	12.2	-30/+60°C	1700	242 x 81 x 93	Class 9	6140-14-149-8588	KDC Radio	France
BB 2847 / 06611S	Li-ion	7.2	5.8	-20/+50°C	370	96 x 66 x 39	Class 9	6140-01-493-8092	Radio & Mine detector	France
BLF BEL / 08001B	Li-ion	25.2	11.6	-40/+70°C	< 2500	130 x 125 x 81	Class 9	tbd	Man-portable radar	France
Cilas / 08101F	Li-ion	29.2	12.2	-30/+60°C	3000	193 x 74 x 136	Class 9	tbd	Laser target designator	France
Eclips / 0097-250-019	Li-ion	tbd	tbd	tbd	3200	128 x 212 x 75	tbd	6140-99-580-6345	Clansman	UK
GDI / 08039R / 99-55-851	Li-ion	25.55	12.2	-20/+50°C	3000	191 x 108.4 x 69	Class 9	tbd	Eryx anti-tank simulator	France
Mirabel / Sophie / 06554G / 08153K	Li-ion	10.8	4.6	-31/+51°C	530	145 x 62.6 x 55.5	Class 9	6140-14-527-4774	Sophie thermal camera	France
Rohde & Schwarz / 06547Z	Li-ion	30.0	6.1	-30/+60°C	1800	199 x 74 x 94	Class 9	tbd	Radiocommunication	France
SAI 2590	Li-ion	14.4 / 28.8	5.8 / 11.6	-30/+60°C	1360	62.2 x 111.8 x 127	Class 9	n/a	Radiocommunication	USA
SAI 2800 / 08034L	Li-ion	7.3	4.9	-25/+60°C	265	129 x 35.5	Non-restricted	n/a	Laser aims / Respirators	USA
06700K 08191Z	Li-ion	3.75	6.8	-30/+60°C	180	73.5 x 62.3 x 21	Class 9	tbd	Simulator - Soldier 2000	France
06719E	Li-ion	3.6	4.8	-30/+60°C	145	77.1 x 59.1 x 22.2	Non-restricted	tbd	Radiocommunication	France
06720F	Li-ion	3.6	9.6	-30/+60°C	280	77.1 x 59.1 x 39.5	Non-restricted	tbd	Radiocommunication	France
06880P / KDC	Li-ion	14.6	18.3	-30/+60°C	2500	242 x 81 x 93	Class 9	tbd	Radiocommunication	France
08013P	Li-ion	7.5	2.6	-30/+60°C	170	106.3 x 45.5 x 19.8	Non-restricted	tbd	Laser designator	France
08073B 08260W	Li-ion	30.0	6.8	-30/+60°C	1700	207.1 x 70.6 x 65.6	Class 9	tbd	Back-up power	France
08100E 08193B	Li-ion	3.6	23.2	-20/+50°C	700	143 x 41.5 x 62.5	Class 9	tbd	Simulator	France
08131M 08192K	Li-ion	3.6	11.6	-20/+50°C	350	146 x 63 x 23	Class 9	tbd	Simulator	France
08175H	Li-ion	10.8	5.8	-20/+50°C	550	82.5 x 74 x 58.3	Class 9	tbd	Simulator	France
08201K	Li-ion	7.5	6.8	-30/+60°C	400	79.5 x 79 x 46.5	Class 9	tbd	Radiocommunication	France
08258U	Li-ion	11.25	4.8	-30/+60°C	500	85.5 x 73 x 55	Non-restricted	tbd	Radiocommunication	France
08264A	Li-ion	3.65	4.8	-30/+60°C	150	77.4 x 75.5 x 27.4	Non-restricted	tbd	Radiocommunication	France

Saft
Specialty Battery Group
 12, rue Sadi Carnot
 93170 Bagnolet – France
 Tel: +33 (0)1 49 93 19 18
 Fax: +33 (0)1 49 93 19 69

www.saftbatteries.com

Doc N° 32018-2-0907
 Edition: September 2007

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

Published by the Communications Department.

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

Produced by Arthur Associates Limited.



SAFT

Serving your military power needs around the world

Saft Lithium Battery Group military sales network

Australia

Saft Batteries Pty Ltd.
Unit 18/167 Prospect Highway
Seven Hills, NSW 2147
Tel.: +61 2 9674 0700
Fax: +61 2 9620 9990
david.anderson@saftbatteries.com.au
gary.piper@saftbatteries.com.au

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
j.vanlooche@helpelec.be
joel.vanlooche@helpelec.be

Denmark

Scansupply Energy ApS
Topstykket 25
3460 Birkerød
Tel.: +45 45 82 50 90
Fax: +45 45 82 54 40
flemming@scansupply.dk

Finland & Baltic countries

HansaBattery Oy
Kilonkallio 3A
02610 Espoo
Tel.: +358 207 631 880
Fax: +358 207 631 889
hans.sandstrom@hansabattery.fi
jon.sandstrom@hansabattery.fi

France

Saft
Rue Georges Leclanché
B.P. N° 1039
86060 Poitiers
Tel.: +33 (0)5 49 55 48 59
Fax: +33 (0)5 49 55 56 30
eric.nadeau@saftbatteries.com

Germany

Saft Batterien GmbH
Löffelholz Strasse, 20
90441 Nürnberg
Tel.: +49 911 94174 20
Fax: +49 911 94174 25
ecaterina.hauser@saftbatteries.com

India

Promod N Mathur
Representative in India
C9/9650, Vasant Kunj
New Delhi 110070
Tel.: +91 1126 898947
Fax: +91 1126 134223
promod.mathur@vsnl.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
Achtseweg Zuid 151
5651 GW Eindhoven
Tel.: +31 40 272 1902
Fax: +31 40 272 1904
guido.jasper@saftbatteries.com

Norway

Saft AS
Grini Naeringspark 1
N-1361 Osteraas
Tel.: +47 6716 4161
Fax: +47 6716 4170
trond.beyer@saftbatteries.com

Russian Federation

ZAO Alcatel (Saft)
15A, Leninskiy prospect
119071 Moscow
Tel.: +7 495 937 09 67
Fax: +7 495 937 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 Power System Iberica S.L.
Parque Tecnológico de Alava
Albert Einstein, 31 - Apdo. 472
01510 Minano (Alava)
Tel.: +34 945 214 167
Fax: +34 945 214 111
e.ldearmentia@pspsi.es

Sweden

Saft AB
Illervägen 6
SE-305245 Växjö
Tel.: +46 470 452 47
Fax: +46 470 452 57
bengt.bengtsson@saftbatteries.com

UK (+ Ireland)

Saft Ltd.
Jubilee Cottage
Westfield Common, Woking
GU22 9NT - UK
Tel.: +44 1483 766 979
Fax: +44 1483 766 979
anne.brown@saftbatteries.com

USA (+ Canada/Mexico)

Saft America Inc.
313, Crescent Street
Valdese, NC 28690 - USA
Tel.: +1 (828) 879 5009
Fax: +1 (828) 879 3981
roger.may@saftbatteries.com

Saft Lithium military batteries 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.: +44 191 497 4701
Fax: +44 191 456 8256
neil.miller@saftbatteries.com

USA

Saft America Inc.
313, Crescent Street
Valdese
NC 28690
Tel.: +1 (828) 874 4111
Fax: +1 (828) 874 2431
lithiumsales.us@saftbatteries.com

Saft

Specialty Battery Group

12, rue Sadi Carnot
93170 Bagnolet - France
Tel.: +33 (0)1 49 93 19 18
Fax: +33 (0)1 49 93 19 69

www.saftbatteries.com

Doc N° 32022-2-0907
Edition: September 2007

Data in this document is subject to change without notice and becomes contractual only after written confirmation.
This sheet is an insert part of Complete power solutions - Autonomy for fighters in the field Doc N° 32019-2-0907.
Published by the Communications Department.
Société anonyme au capital de 31 944 000 €
RCS Bobigny B 383 703 873
Produced by Arthur Associates Limited.



SAFT