

S A F T

Specialty Battery Group
rue Georges Leclanché BP 1039
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TRANSPORTATION CERTIFICATE

Ref. TC-1S2P LS 14500C 06/03-3

This is to certify that several Saft battery pack types **1S2P LS 14500C** assembled from two LS 14500C cells in parallel, share the same LS 14500C component cell and the same "2-cells-in-parallel" assembly concept than the already tested 1S2P LS 14500C "ATR" battery pack P/N 04720B that has met the requirements of:

- UN Recommendations on the transport of dangerous goods, Model Regulations 12th Revised edition - 2001 - Ref. ST/SG/AC.10/1/Rev. 12
- UN Recommendations on the transport of dangerous goods, Manual of Tests and Criteria 3rd Revised edition - 1999 - Ref. ST/SG/AC.10/1/Rev. 3, amended per Addendum 2, Annex 4 - Ref. ST/SG/AC.10/27/Add.2

as detailed in Saft-Poitiers internal report P 0246/03, dated 15/05/2003.

Concerned Part Numbers: 04626H, 04756N, 04818C, 04856R.

Product Description

Primary (non- rechargeable) Lithium-Thionyl chloride (Li-SOCl₂) battery packs assembled from two AA-sized LS 14500C cells in parallel.

Nominal Voltage	3.6 Volts
Nominal Capacity	5.5 Ah
Lithium metal content	0.71 x 2 = 1.42 gram
Maximum recommended continuous discharge current	50 mA

Product Classification

By similarity with the already tested 1S2P LS 14500C "ATR" battery pack P/N 04720B that passes the UN-defined transport tests and because they also have a lithium content below the 2 grams limit, **the 1S2P LS 14500C battery packs P/N 04626H, 04756N, 04818C and 04856R are declared exempt from the Dangerous Goods regulations. They are non-restricted to transport/non-assigned to Class 9**, providing packed in accordance with Clause 188 of UN Recommendations on the transport of dangerous goods, Model Regulations 12th Revised edition - 2001 - Ref. ST/SG/AC.10/1/Rev. 12.

Signed on Behalf of Saft Specialty Battery Group

Pascal Hans SBG Product Test Engineer



dated 05/09/03

Gilles Tardivo SBG Quality Manager



dated 05/09/03

Alain Kerouanton SBG Lithium Product Manager



dated 02/09/03

Lithopack

3.6 or 7.2 V Primary lithium - thionyl chloride (Li-SOCl₂) battery pack series



A rugged, reliable and flexible 3.6 or 7.2 V battery pack concept for long-term applications requiring low base currents combined with superimposed pulses in a wide temperature range.

Key features

- Series or parallel assembly of two AA-sized cells
- High drain version with 2.25 Ah rated LS 14500 cells
- High capacity version with 2.75 Ah rated LS 14500 C cells
- Component cells with stainless steel container and hermetic glass-to-metal sealing
- ABS, flame-retardant (UL V2) plastic case
- JST 02KR-6S end-connector
- High and stable operating voltage
- Low self discharge rate (less than 1% after 1 year of storage at +20°C)
- Non flammable electrolyte
- Non restricted for transport

Optional upon request

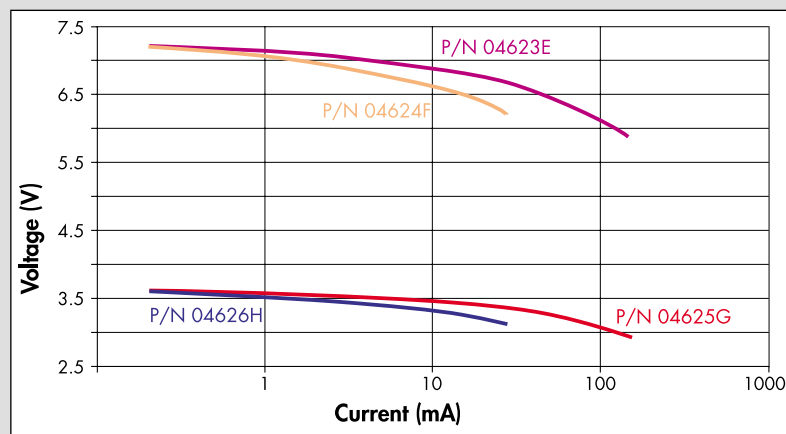
- Wires length and orientation
- Connector type
- Current limiting resistor in series
- Velcro tape for holding
- Custom labelling

Main applications

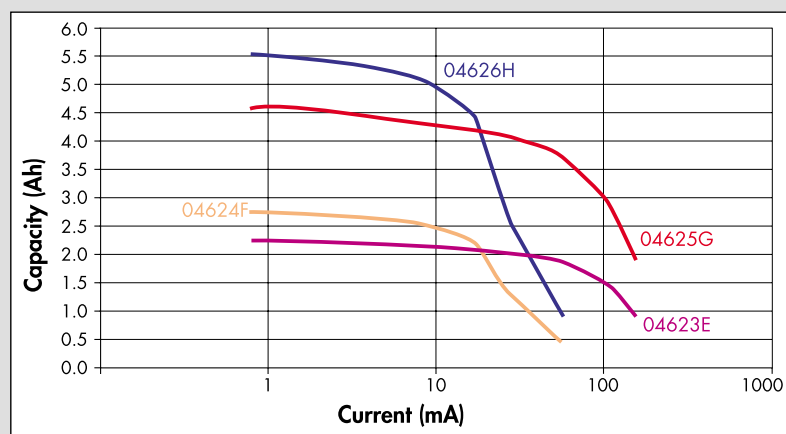
- Memory back-up
- Metering systems
- Alarm equipment
- Industrial electronics
- ... etc.

Pack design	2 LS 14500 in series	2 LS 14500C in series	2 LS 14500 in parallel	2 LS 14500C in parallel
Part number	04623E	04624F	04625G	04626H
Electrical characteristics (typical values for packs stored for one year or less)				
Nominal capacity	2.25 Ah (3 mA)	2.75 Ah (1 mA)	4.5 Ah (6 mA)	5.5 Ah (2 mA)
(at +20°C and for a given discharge current. The capacity restored by the cell varies according to current drain, temperature and cut off).				
Open circuit voltage (at +20°C)	7.34 V	7.34 V	3.67 V	3.67 V
Nominal voltage (at +20°C and given current)	7.2 V (0.2 mA)	7.2 V (0.2 mA)	3.6 V (0.4 mA)	3.6 V (0.4 mA)
Maximum recommended continuous current	120 mA	25 mA	240 mA	50 mA
(to get 50% of the nominal capacity. Higher currents possible. Consult Saft).				
Pulse capability : varies according to pulse characteristics (frequency, duration), temperature, cell history (storage conditions prior to usage) and the application's acceptable minimum voltage. For estimation, consult Saft.				
Storage (recommended) (possible without leakage)	+30°C max -60/+100°C			
Operating temperature range	-60/+85°C	-60/+40°C	-60/+85°C	-60/+40°C
(operation above ambient T may lead to reduced capacity and lower voltage readings at the beginning of pulses).				
Typical weight	37 g	37 g	37 g	37 g

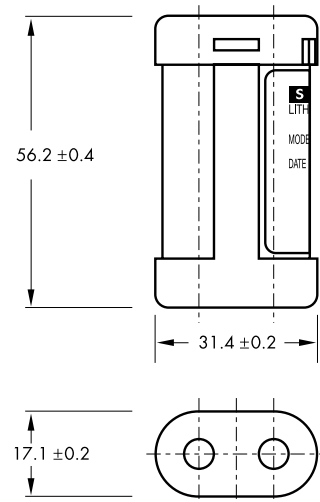
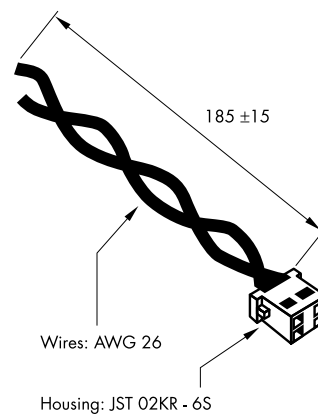
Cell voltage at mid-discharge versus Current (at +20°C)



Capacity versus Current at +20°C (2.0 V cut off)

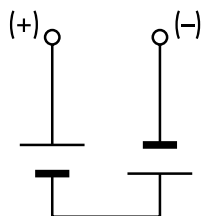


Lithopack

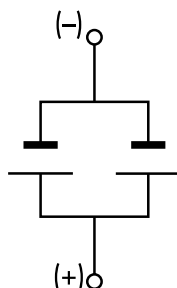


dimensions in mm

Electrical diagram



P/N 04623E
(2 LS 14500 cells in series)
P/N 04624F
(2 LS 14500C cells in series)



P/N 04625G
(2 LS 14500 cells in parallel)
P/N 04626H
(2 LS 14500C cells in parallel)



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Doc. N° 12.00 - 31014.2
Published by the Communications Department

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