

# Super High Energy Series

## Nickel-Metal Hydride

### VH D 9500 XP

The Super High Energy series has been improved with Saft Ni-MH D cell, VH D 9500 XP.

The suffix "XP" stands for **eXtended Power** and illustrates the higher power capability of the VH D 9500 XP. This new cell is able to sustain discharge rates as high as 70 Amp compared to 50 Amp max for the existing cell. The XP technology combines the latest technical innovations developed for the power tool and mobility markets as well as for other professional appliances.

To meet customers' requirements, Saft provides custom-designed and standardized battery packs and electronic monitoring systems.

For your battery design and system needs, please contact Saft's engineers.

#### Applications

- Electric bicycles, wheelchairs and medical carts
- Professional lighting
- Lawn and gardening tools
- Vacuum cleaners
- Military equipment

#### Main advantages

- Super high capacity
- Quick and fast charge
- High power capability
- Excellent cycling performance
- Good storage ability

#### Technology

- Foam positive electrode
- Metal-hydride negative electrode



#### Electrical characteristics

Nominal voltage (V)	1.2
Typical capacity (mAh)*	9500
IEC minimum capacity (mAh)*	9000
IEC designation	HRH 33/62
Impedance at 1000 Hz (m Ω)	3

\* Charge 16 h at C/10, discharge at C/5.

#### Dimensions

Diameter (mm)	32.15 ± 0.10
Height (mm)	58.2 ± 0.4
Top projection (mm)	1.4 ± 0.4
Top flat area diameter (mm)	5.6
Weight (g)	168

Dimensions are given for bare cells.

#### Charge conditions

Rate	Time (h)	Temp. (°C)	Charge current (mA)
Fast	2-3	0 to + 35	up to 5000
Standard	16	0 to + 40	900
Topping	(after a main charge)		300 to 900
Trickle*	(after a topping)		50 to 300

End of charge cut-off is requested: dT/dt recommended, -dV acceptable.

\* Trickle charge follows fast charge.

#### Maximum discharge current

Continuous (A) at + 20°C	70
Peak (A) at + 20°C*	150

\* Peak duration: 0.3 second - final discharge voltage 0.6 volt/cell.



**saft**

**Temperature range in discharge**  
 - 10°C to + 40°C

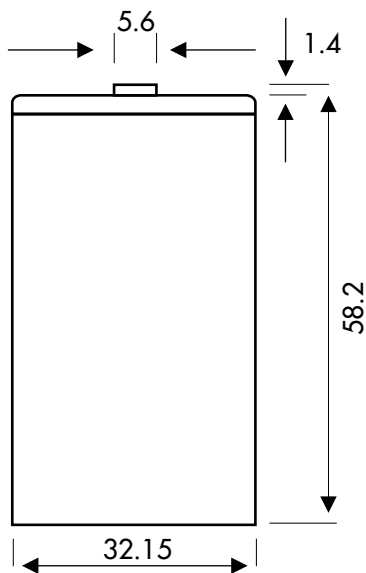
**Storage**

Recommended: + 5°C to + 25°C  
 Relative humidity: 65 ± 5 %

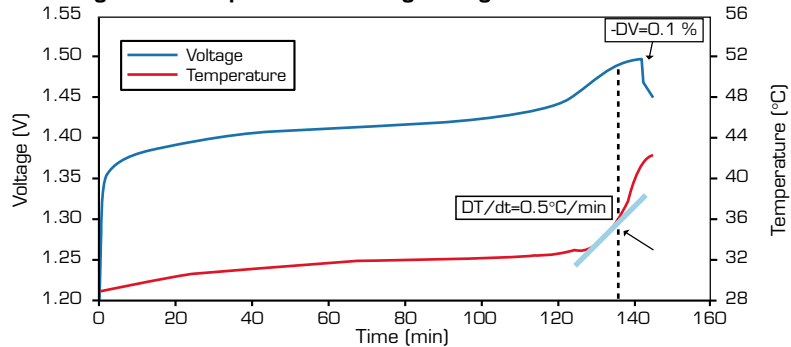
**Typical performances**

For graphs shown, C is the IEC<sub>5</sub> capacity.

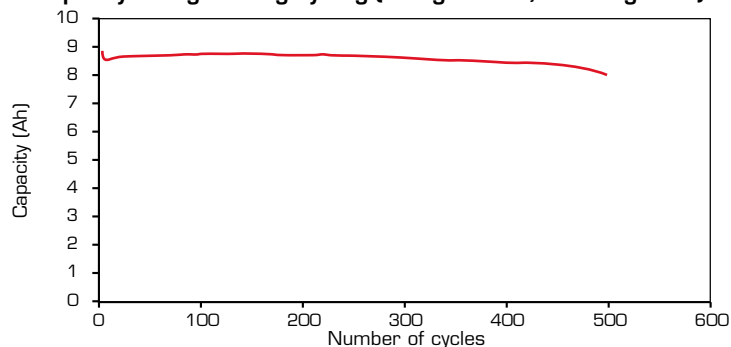
Dimensions are in mm.



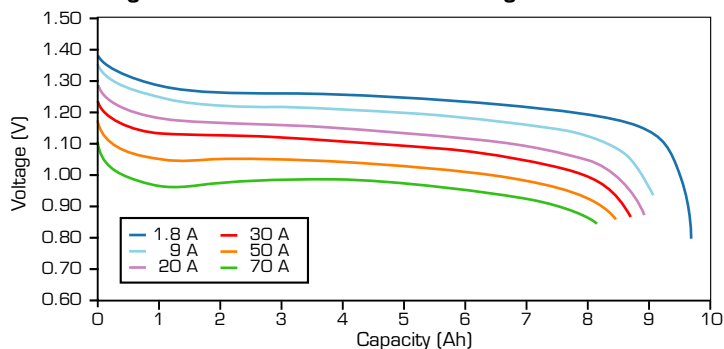
**Voltage and temperature during charge at 4 A**



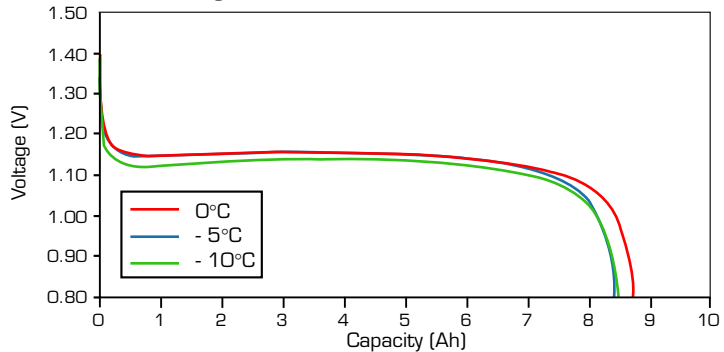
**Capacity change during cycling (charge 4.5 A, discharge 9 A)**



**Discharge at different rates, after charge 2h24 at 4.5 A**



**Discharge at 9 A at different temperatures, after fast charge at 4 A**



Data are given for single cells.  
 Please consult Saft for any use of this cell in other conditions than those given in this data sheet.

**Saft**  
**Rechargeable Battery Systems**  
 12, rue Sadi Carnot  
 93170 Bagnolet - France  
 Tel.: +33 (0)1 49 93 19 18  
 Fax: +33 (0)1 49 93 19 68  
 Email: rbs.info@saftbatteries.com

[www.saftbatteries.com](http://www.saftbatteries.com)

DOC N°11118-2-1207  
 Data in this document are subject to change without notice and become contractual only after written confirmation by Saft.  
 Photo credits: Saft  
 Published by the Communication Department  
 Saft S.A. Stock capital 31.944.000  
 RCS Bobigny B 383 703 873  
 Designed by Soyouzgraphic.com



**SAFT**