

# How to handle and store batteries

1. Keep children away from batteries.
2. Do not allow inexperienced or uninformed people to handle batteries.
3. Store in a safe and secure location to avoid access by unauthorised people.
4. Never use open flames or sparks near ANY battery even if the battery is sealed or semi-sealed. Escaping gas can cause an explosion!
5. Batteries should be stored in a cool, dry (20-25°C) place and out of direct sunlight.
6. Tilting a semi-sealed battery can cause acid to leak through the over pressure relief vents. Batteries must always be transported and stored in an upright position.
7. Under no circumstances should any tools or objects be placed on top of a battery.
8. All battery connections must be carried out with appropriate and preferably isolated tools.
9. No battery should be stored in a discharged or partly discharged condition as this can damage a battery. When storing any battery for long periods of time, check the voltage every 3 to 6 months. If the voltage (OCV) drops below 12.5V, recharge the battery. If the battery has a built-in hydrometer, check the hydrometer periodically. If the indicator appears black, recharge the battery immediately even if the storage period has been less than 3 to 6 months.

## Effect of Temperature on Batteries:

Temperature affects all batteries in different ways. The OPR batteries can operate in extreme temperature ranges from -15°C to 50°C. However, gel battery nominal capacity and optimum performance are based on operating temperatures of 20 - 25°C. Above these temperatures, the battery capacity will increase slightly but its lifespan will decrease substantially at higher temperatures. When designing your battery system, the different discharge and recharge performance at different temperatures should be taken into account.

If you connect batteries in series or in parallel you must never use batteries with different Ampere hour ratings or batteries from different batches, of different ages, of different makes or batteries with different charging levels. You will over time damage your existing and new batteries if you do so.

To avoid batteries going out of step in multiple 12V blocks in string connections (series or parallel or combined), please contact Sinetech. We offer an active device that prevents out of step voltages of individual 12V batteries under charge conditions, thus extending battery life expectancy.



## Charging method for OPR Range only:

Constant voltage and current limited charging method is recommended for the OPR battery range. The charging voltage must be checked regularly. To optimise battery performance, ensure that the voltage is kept within the following limits:

1. For standby, 13.6V (at 25°C), -3mV/°C/cell, above 25°C.
2. For deep cycle applications, 14.4V (at 25°C), -5mV/°C/cell, above 25°C.

Initial Charge Currents	Minimum	Recommended	Maximum
OPR60-12	8A	10A	12A
OPR120-12	15A	20A	25A
OPR180-12	23A	30A	37A
OPR240-12	30A	40A	50A

