

Storage Recommendations and Self Discharge Rates

Storage Recommendations:

1. Do not store batteries in containers with flammable materials.
2. Store batteries in well ventilated, temperature and humidity controlled locations. Optimum temperature is between 68°F (20°C) and 86°F (30°C). Optimum relative humidity is between 30% and 60%.
3. Battery must be discharged below 50% state of charge prior to storage.
 - i. New batteries are typically 30% to 50 % charged, when shipped from Motorola factories. Thus, there is no need to charge or discharge the batteries prior to storage.
 - ii. Used batteries removed from service for extended periods (>30 days) should be discharged to about 50% of their capacity before storage.
4. If planning to store batteries for periods longer than 1 year, partially charge the batteries at the recommended frequency intervals
 - i. Lithium Ion Chemistry every 12 months

Battery Self Discharge Rates:

1. NiCd
 - a. 5% in the first 24 hours
 - b. 15% per month thereafter
 - c. Increases with age / cycles, memory effect, if overheated during charging and if stored above room temp (doubles with every 10C temp increase)
2. NiMH
 - a. 10% in the first 24 hours
 - b. 20% per month thereafter
 - c. Increases with age / cycles, memory effect, if overheated during charging and if stored above room temp (doubles with every 10C temp increase)
3. Lilon
 - a. 2% in the first 24 hours
 - b. 5% per month thereafter
 - c. Internal protection circuitry contributes 3% of the self discharge
 - d. High cycle count / age has no effect