



MIXING OF DRY FLAKE KOH

PREPARATION FOR SERVICE OF NICKEL CADMIUM (ALKALINE ELECTROLYTE) BATTERIES

Batteries which are shipped dry and discharged require the addition of liquid electrolyte and charging.

Safety Precautions

Be careful when handling liquid electrolyte and avoid splashing. It is a strong caustic agent and can cause severe burns. Always wear face and eye protection (preferably a transparent face mask) rubber gloves, and long-sleeved clothing. Keep a supply of 3% boric acid solution available for neutralization. Vinegar is a good substitute. If neither is available, flood the affected area with water. Baking soda will not neutralize potassium hydroxide electrolyte. In the event medical attention should be required, inform the attending medical personnel that the burn was an alkaline rather than an acid burn since treatment is different.

Mixing of Dry Flake Electrolyte

1. Use a clean plastic, hard rubber, or welded steel vessel. Do not use a vessel made of copper, zinc, galvanized steel or aluminum.
2. Use a ratio of 3 pounds of dry flake electrolyte per gallon of water. Use only de-ionized or distilled water. Do not use commercial grades of caustic potash as they are not pure enough.
3. Put water in the container first. Then add the dry electrolyte---slowly. Mix well with a clean plastic, steel or wooden paddle. The solution will become hot.
4. Cover the container to keep out dirt, and allow to cool to room temperature.
5. After cooling, check the specific gravity with a hydrometer. If instructions were properly followed, the specific gravity will be higher than specification which is $1.190 \pm 0.020^*$.

6. Add small quantities of water and mix thoroughly, checking specific gravity after each water addition. Continue this step-by-step operation until the proper specific gravity is attained.
7. Electrolyte is now ready for use.

*Note: Specific gravity of electrolyte for normal battery applications is 1.190 ± 0.020 . However, for batteries which will be exposed to lower temperatures than 0°F for prolonged periods, electrolyte of higher specific gravity is recommended.

Fill and Charge

1. Fill the cells to the low level mark.
2. Charge at the recharge (equalize) voltage setting (1.55-1.6 v/c or greater) for 24 hours.
3. After the cells are charged, allow to cool, then finish filling with electrolyte to the high level mark.

Note: From this point on, electrolyte should never need to be added again unless for some reason raw electrolyte was spilled from the cell. Pure water is all that should ever need to be added to the cell as the electrolyte level drops due to evaporation and electrolysis.