

## Silver Zinc (AgZn) Batteries

Silver-Zinc batteries produced by EaglePicher have been used in applications ranging from long-life service applications to manned space flights. Each is manufactured under exacting specifications to insure that the capabilities are compatible with requirements. Cycle life, depending on design requirements and discharge depths, has been demonstrated in excess of 500 cycles. These batteries are rated as low and high rate systems.

Development of the automatically, or remote, activated silver-zinc battery at EaglePicher was initiated in the early 1950's. The early systems developed were simple single section batteries with one voltage output. In 1951 EaglePicher initiated a program which led to the development of a series of cell designs of various sizes designated as the "A" line of cells. These have since been standardized into cells offering a wide range of capabilities. Each of these cell sizes offers low and high rate capabilities in both primary and secondary designs.

Primary batteries are dry-charged and require only the addition of electrolyte prior to the load being applied. High rate batteries may be discharged at rates sufficiently high to expend their energy in three minutes. Medium rate units may be used with excellent output efficiencies at rates, which will utilize their energy in ten minutes or up to two hours or longer. The low rate units provide best efficiencies at rates of from four hours to 100 hours or more. Voltage regulation at any discharge rate is good. With moderate temperature control, storage in a dry condition is practical for up to 5 years. Activated charge retention characteristics are generally good but are affected by temperature and the particular method of cell construction employed.



Secondary batteries can be manufactured either dry-charged or dry-uncharged. The high rate secondary batteries may be discharged at sufficiently high rates to expend their energy in 15 minutes. The low rate units provide best efficiencies at rates of four hours or greater.



Today, EaglePicher is producing highly reliable complex systems comprised of as many as fourteen different voltage outputs for the missile and aerospace industry. EaglePicher has produced in excess of five million five hundred thousand (5,500,000) Silver Zinc batteries encompassing over six hundred fifty (650) different configurations.