

LiSOCl₂ Reserve Battery for Use in Electronic Fuzes

Diehl & Eagle Picher (D&EP), a German-American joint venture, develops and produces activatable thermal batteries for defence applications, customized battery packs for the defence and civil market and for 10 years lithium reserve batteries for applications in proximity, time and multifunction fuzes used for mortar, artillery and naval gun ammunition.

The Lithium thionylchloride systems (Li/SOCl₂) for Reserve batteries distinguish by extremely high energy density. The cells of the battery are embedded in a stainless steel case and the cell stack is rotation symmetrically arranged in the container.



In the center of the battery case a glass ampoule filled with electrolyte (SOCl₂) is located, which is broken by a special application specific release mechanism, depending on the respective system acceleration.

By releasing the electrolyte and wetting the battery cells the battery becomes “active” and sets its energy free.

Due to this technology the batteries are maintenance-free, feature a long shelf life and high reliability. Furthermore the batteries can be used even in extreme temperature ranges between -46°C to +63°C.

By the modular design of our battery systems we are a flexible partner responding to various customer requirements (voltage level and load requirement) and able to deliver solutions for most applications.



The first batteries were integrated 2002 in Junghans Microtec's newly developed electronic fuzes DM 52 /DM 84 (today L163/L166).

Since production start in 2002 almost 360.000 pcs. fuze batteries have been produced for domestic and foreign customers. The batteries are successful in global use e.g. in fuzes for the 155 mm ammunition of the Panzerhaubitze 2000 (PzH2000).