

Technical Note – Effect of Water or Salt Water on FirePro Aerosol Compound.

The FPC compound is a compact rigid solid material. It is a stable compound having a self-activation temperature at 300 °C and a certified shelf life of 15 years. The FPC compound is a blend of an oxidizing agent (which is the potassium nitrate), fuel binders and additives.

In contrast to the pure Potassium metal which oxidizes rapidly in air and reacts vigorously with water, the FPC solid compound is composed of stable potassium salts (mainly potassium nitrate) which do NOT explode on contact with water and humid environments.

The presence of the fuel binders in the compound enhances the thermal and mechanical properties of the FPC compound in terms of high thermal stability, good rigidity and hardness.

They form highly cross-linked polymeric structures, which are insoluble in water, that undergo a curing process to form a hardened material. Even in the case of salt or water absorption, the FPC compound will not undergo phase separation and structure decomposition. Once the FPC compound is well dried, it will ignite to form the aerosol.

FirePro generators are certified and listed by Underwriters Laboratories (UL) in the USA and Canada, and the British Standards Institute and KIWA in Europe.

The UL 2775 Standard for Safety Fixed Condensed Aerosol Extinguishing System Units requires tests for high humidity and salt spray corrosion. These were successfully conducted. FirePro generators were exposed to high humidity conditions (95 ± 2 % Relative Humidity) for 30 days, and for the salt spray test the FirePro generators were sprayed with a 20 wt% solution of Sodium Chloride.

