2.2. **PMN-2**

To prevent easy disarming via overpressure (e.g., surface charge detonation), the PMN-2 was designed with a complex arming and firing mechanism. This increased complexity results in multiple failure points (many of which were simultaneously observed in our harvested samples). The PMN-2 has a rigid plastic housing, with a rubber cover over the cross-shaped pressure plate (mostly missing in Figure 3). The pressure plate presses down on a spring-loaded stepped window (similar to that of the PMN). The PMN-2 adds an additional mechanism that holds the detonator out of line with a spring; if this spring degrades, or if this channel is blocked, the detonator will not move into the proper position, and it will not simultaneously encounter the striker.

2.2.1. **Component identifications**

The exterior plastic casing of the PMN-2 has been identified as a poly(phenylene) oxide (PPO). The top rubber covers obtained from the field were significantly deteriorated; as a result, complete materials identification remains elusive. The rubber has been determined to be a chlorine-containing rubber, and by digesting the organic material with nitric acid, we found that ~50% of the mass is SiO₂. IR spectra further identified the SiO₂ form to be from a quartz additive. The rubber experienced significant degradation (visually this appears to be a result of fire damage), leaving the pressure plate in contact with the soil.

As is apparent in Figure 3 and Figure 4, failure of this rubber cover allowed root infiltration. This also provided ready access to the interior for water and sediment deposition. Inside, numerous metal