



Adverse Reaction of Potassium Chlorate and Potassium Chlorate Based HMEs with the Pocket ETK

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The Research Division at NSWC, IHD investigated a report of a violent reaction occurring when the chlorate reagent from the Pocket ETK Explosive Testing Kit (Lindon Group) is applied to samples of pure potassium chlorate or potassium chlorate mixed with a fuel such as fuel oil, sugar or aluminum. It appears that the reaction is initiated when using an excessive amount (bulk) of material. **The Pocket ETK Explosive Testing Kit was designed for trace detection of HMEs and not intended to be used on bulk quantities of sample.**

1. Adverse reaction with bulk quantities of pure potassium chlorate or potassium chlorate/fuel mixtures.

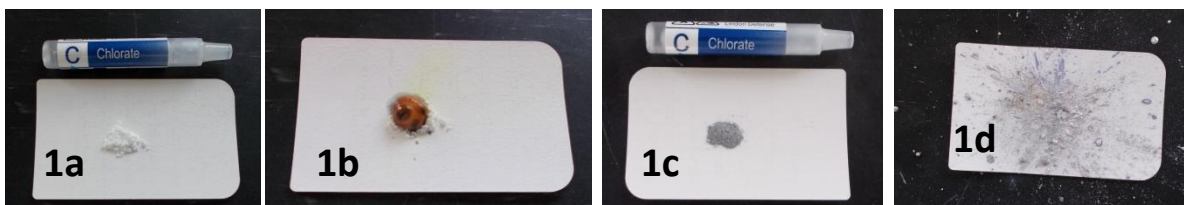


Figure 1. The application of chlorate reagent to a bulk sample of pure potassium chlorate (Figure 1a and 1b) or potassium chlorate mixed with a fuel such as aluminum (Figure 1c and 1d) resulted in the evolution of yellow smoke, rapid burn, and a loud audible “snap”.

2. Proper test quantity for unknown powders when using the Pocket ETK.

The amount of test material required to safely test with the Pocket ETK Explosive Testing Kit is illustrated in **Figure 2. The amount should be barely visible and smeared on the test wipe.**

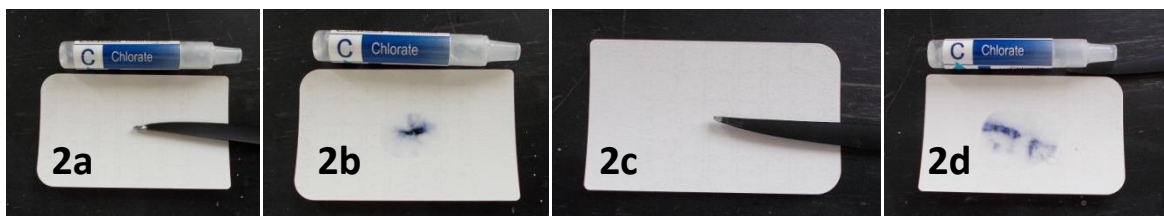


Figure 2. The proper safe test quantity required for the Pocket ETK Explosive Testing Kit. The sample is smeared onto the test pad.

Important: DO NOT USE the Pocket ETK Explosive Testing Kit near a cache or bulk quantity of unknown material. Obtain a small sample and perform the test a safe distance away. NEVER apply any reagent or chemical directly on bulk quantities of unknown material.