

MODIFIED TEST FOR CHLORATES AND PERCHLORATES
(CROPEN TEST)

Reagents:

Solution A: 5 grams of Zinc Sulfate and 4 grams of Potassium Nitrate in 40 milliliters of water
Solution B: 0.015% Methylene Blue

Test Procedure:

- Step 1 - Place a droplet of solution A and a droplet of solution B next to each other, but not touching on a microscope slide mounted on a polarizing light microscope.
- Step 2 - Add a small amount of the material to be tested to the solution A droplet.
- Step 3 - With a glass rod or probe, draw droplet B to droplet A until they touch.
- Step 4 - Examine the interface area for the formation of any crystals.

Perchlorate Crystals

Blue needles, some with a purplish tinge growing singly and in bundles. The crystals are pleochroic. They are dark blue perpendicular and pale blue parallel to the needle length. As they grow they start to develop blunt and sometimes split ends. They are also anisotropic with parallel extinction.

Chlorate Crystals

Mainly blue rosettes (sometimes with a slight purple tinge) develop at a slower rate than the perchlorate, however some single crystals will form. The chlorate crystals are smaller and the needles are thinner than the perchlorate form. The needles are pleochroic and isotropic as those formed with perchlorates.