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Lead Acetate Test Papers

Principle of Operation
March 16, 2017

Product Code 175 is a Lead Acetate test paper. This paper is produced by chemically treated a cellulose paper (Ahlstrom Grade 8263) with an aqueous solution consisting of 5.3 % w/w Reagent Grade Lead Acetate Trihydrate and 0.26% v/v puriss grade Acetic Acid. The treated paper is air dried. The dried paper is processed into the individual test papers. Each vial of product contains 100 test papers.

The Lead Acetate test papers can be used to detect the presence of sulfide. The sulfide can be present in an aqueous solution (for example, prepared from sodium sulfide nonahydrate) or as a gas (hydrogen sulfide). When sulfide contacts the lead acetate it produces lead sulfide. Lead sulfide is a black participate. The test paper will darken if lead sulfide is produced. The darkening is proportional to the level of lead sulfide produced. The higher the concentration of sulfide the more intense the darkening of the test paper.

The detection limit for the Precision Lead Acetate test papers is about 5 ppm. It is possible that under tightly controlled conditions a lower detection limit may be observed.

There are several ways to run the test.

1. Dip the strip into a water sample containing sulfide. This method works better for more concentrated samples. Samples near the detection limit may be hard to distinguish from blanks.
2. Place a drop of solution on the test paper. This is a better way to detect low levels. The spot of the drop tends to concentrate the lead sulfide at the edges of the drop making the darkening easier to observe.
3. Air sampling is possible by moistening the strip with water and exposing the strip to air suspected of containing hydrogen sulfide. The level of darkening will depend on the rate of air flow, the length of time the paper is exposed, and the level of hydrogen sulfide present. Care should be taken to understand the implications of these variables in determining the ppm level of the sulfide present.

The QC procedure for releasing the Lead Acetate test paper for sale involves testing a 5 and 250 ppm sulfide solution prepared from sodium sulfide nonahydrate. To be released for sale the 250 ppm sample must test positive (very dark) when the test paper is dipped into the sample. The 5 ppm sample must also test positive (faint brown/black) using the drop method described above.

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