

Application Notes

Potassium Iodide Starch Test Papers (P/N 160)

Potassium Iodide Starch Test Papers are commonly used as part of a Hazardous Material Spill Assessment kit. The test papers can be used as a screening tool to detect the presence of oxidizing materials. It is important to keep the following in mind when developing a protocol for using the test papers:

- The sensitivity of the test papers varies with the oxidizing material. For example, chlorine (bleach) can be detected down to as low as 5 ppm. A drop of the solution being tested when placed on the test paper will turn the paper blue/black. The more intense the color, the more oxidizer present.
- The test papers work best with small static samples. Samples that flow over the paper can wash out the chemicals from the test papers.
- If testing for vapors, wet the test paper with distilled or deionized water first by placing a few drops of water on the paper. This will facilitate the absorption of the vapor into the test paper. Do not use tap water since this may contain a small amount of chlorine disinfectant that will react with the test paper. Vapor testing results will depend heavily on the volume of air/vapor that contacts the moist paper. Do not let the paper dry out. If it does, re-wet it.
- The test papers can also “bleach out.” This occurs when the oxidizer overwhelms the chemicals present. The tell-tale sign of this bleaching is the development of an intense blue/black line at the wet/dry interface. For example, with chlorine (bleach) this effect occurs at about 1000 ppm. If bleaching out is suspected, dilute the material and retest. For very concentrated materials, multiple dilutions may be necessary.

While the test papers are called Potassium Iodide Starch Test Papers, it should be noted that they do not test for potassium or iodide. The name refers to the chemistry utilized, namely the Potassium Iodide Starch reaction, where an oxidizing material will oxidize the iodide contained in the test paper to iodine. The iodide/iodine forms a triiodide ion that complexes with the starch in the paper to form the intense blue/black color.

Disclaimer: The Potassium Iodide Starch Test Papers are a qualitative test. They should be used for screening purposes only. Positive results should be confirmed with a second test method.

Safety: Extreme care should be taken when handling any suspected hazardous spill situation.