

Iron Spot Test

Instructions for Qualitative Test



Step 1. Preparation of reagents

- Dissolve 10 g of potassium thiocyanate (KSCN) in 100 ml water.
- Prepare 2N of hydrochloric acid (HCl).
- Prepare 3% hydrogen peroxide (H_2O_2) solution.
- These reagents can be stored at room temperature for approx. a year

Step 2. Activation of the reagents

- Mix equal volume of KSCN and HCl just prior to use. This reagent mix is stable for approx. 2 days.
- Use wash bottles to facilitate the application of reagents on a sample.



Step 3. Prepare your sample

- Make a flat surface the size of about 8 cm in diameter of the fortified flour. This can be done by pressing down with a flour slick, spoon, the bottom of a small beaker or any suitable smooth surface.
- Note down the sample description or identification.

Step 4: Apply the reagents onto the sample

- Drop a few milliliters of the freshly mixed HCl/KSCN reagent onto the surface sufficient to wet an area of approx. 5 cm in diameter.
- Let stand at least 5 min and observe if the red spots appear.
- Natural iron present in the flour will be evident from a uniform pink color.
- If red spots appear than the flour is fortified with NaFeEDTA (Fe^{3+})



Step 5. Prepare the sample

- To test if the flour is fortified with ferrous fumarate, ferrous sulfate (Fe^{2+}) or electrolytic iron apply H_2O_2 solution on the surface wetted initially with HCl/KSCN.
- Wait for 5 minutes. If red spots appear where previously there were no spots then flour is fortified with ferrous iron.
- If no spots appear after step 4 and 5 then the flour has no added iron.

Notes: The instructions are based on the official AACC Method 40-40