higher iron levels are found nearest the brake component experiencing active corrosion. Conventional brake fluid testing methods are not suitable for determining the amount of iron present in brake fluid when testing a vehicular brake fluid system. For example, a vehicle with a copper level above 200 ppm, indicates that there is a possibility that corrosion exists, but the conventional testing methods have no way to measure the level of iron corrosion.

Referring to FIG. **1**, dip test strips **10** having colormetric reagent **12** disposed thereon are diped into a sample of brake fluid for one second. The colormetric reagent is 2,2'-bipyridine. After shaking off excess fluid and waiting approximatly 3 minutes, the strips show a red coloration that increases in intensity as the concentration of iron increases.

The colorimetric reagent may further contain an ingredient that reduces trivalent iron to bivalent iron, such a particular reagent may be more sensitive to this type of ion. In certain embodiments, the color reaction causes a gradual change from white to red. In one embodiment, the presence of a red color reaction from the colorimetric reagent can be used as an indication of active iron corrosion within the brake system. A bright red color, indicating 300 to 500 ppm iron, is an obvious sign of accelerated active brake system component iron corrosion.

Referring now to FIG. **2**, a kit **20** of the invention includes a plurality of substrates (e.g., strips **22** and/or tubes **26**) upon or within which colorimetric reagent **24** is disposed. A small sample of brake fluid **28** is dispensed from a dropper onto strip **22** or within tube **26**, which may have the colorimetric reagent **24** already disposed within or added separately. Thus, brake fluid sample **28** contacts the colorimetric reagent and may be read manually for color content or with the aid of color testing machines. For example, a strip reading spectraphotometer **30** or tube reading spectraphotometer **32** may be employed to read the resulting color and provide a reading that correlates with the presence of an iron ion in the brake fluid. Of course, the colorimetric reagent may be disposed upon or within materials that are rigid, flexible and of various styles, shapes and sizes.

In certain embodiments, the test strip includes multiple reaction "zones" for different brake fluid tests testing the presence of active corrosive metal. Active corrosive metals can include iron, copper, zinc, or a combination thereof. In another embodiment, the brake fluid iron test may be performed with fluid from anywhere in the vehicle hydraulics system where access to brake fluid is available, such as at the bleeder screws located at each wheel at various anti-lock brakes (ABS) bleeder screw locations. If a high iron level is detected, i.e., 100 ppm or higher, additional testing may be required at various locations in the brake system in an attempt to identify the location of active corrosion.

While the preferred embodiments of the present invention have been illustrated in detail, it should be apparent that modifications and adaptations to those embodiments may occur to one skilled in the art without departing from the scope of the present invention.

What is claimed is:

1. A method for identifying a location of active corrosion in a metal brake component of a brake system through assessing a concentration of iron in brake fluid, comprising the steps of:

(a) contacting a colorimetric reagent and a brake fluid sample located nearest to a first brake component at a first location in the brake system, wherein said colorimetric reagent reacts to produce a color indicating the presence of iron in said brake fluid sample, and

(b) observing and comparing said color with a standard indicating an iron concentration of about 50 parts per million or greater, wherein if said color matches said standard indicating an iron level of about 50 parts per million or greater, additional testing of said first brake component at said first location in the brake system is performed in order to identify and confirm active corrosion of said first brake component.

2. The method of claim **1**, wherein said colorimetric reagent contains an ingredient that reduces trivalent iron to bivalent iron.

3. The method of claim **1**, wherein said colorimetric reagent comprises 2,2'-bipyridine.

4. The method of claim **1**, wherein said color varies in intensity with the concentration of iron.

5. The method of claim **1**, wherein said colorimetric reagent is affixed to a strip or dipstick.

6. The method of claim **5**, wherein the strip or dipstick includes multiple colorimetric reagents for different brake fluid tests, wherein each of said reagents test for the presence of iron, copper, or zinc.

7. The method of claim **1**, further comprising the step of analyzing said colorimetric reagent in an electronic color tester in step (b).

8. The method of claim **1**, further comprising comparing said color with a standard indicating an iron concentration of about 100 parts per million or greater, wherein if said color matches said standard indicating an iron level of about 100 parts per million or greater, additional testing is performed on a brake fluid sample located nearest to a second brake component at another second location in the brake system in an attempt to identify a location of active corrosion.

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