ChromateCheck™ SWABS
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PERFORMANCE CHARACTERISTICS OF ChromateCheck™ SWABS II (Cat. # CR8E)

I. The Reaction

A ChromateCheck™ Swab contains two glass ampoules each containing the reagents required for the colorimetric detection of chromium (VI). One ampoule contains a dye reactive with Chromium (VI) which under the proper conditions of pH and solvent conditions turns deep pink/purple. The second ampoule contains the buffers and solvents required to optimize the reaction of chromium (VI) with the dye. ChromateCheck™ provides careful control of the ratio of solvent to dye which provides a reproducible and reliable test. The reaction leads to a light pink/purple to deep purple result on the tip of the swab (depending on the concentration of chromium (VI) present). Color development is linear with concentration.

II. Sensitivity

To determine the sensitivity of ChromateCheck™ Swabs, a standard curve was prepared with a solution of chrome (6) AA standard at a concentration of 984 µg/ml was used. Dilutions of the standard were used to determine the standard curve. For testing 100 µl of each dilution was placed on plastic weigh boats. A clear color progression was observed. At the highest concentrations the color is saturated.

The following table illustrates the reaction of ChromateCheck™ Swabs to each concentration.

Chromate Tested (µg)	Color Result	Rating (%)
9.8	Deep purple	100
4.9	Deep Purple	93
2.4	Purple	86
1.2	Purple	71
0.98	Medium to dark purple	64
0.49	Medium to dark purple	50
0.24	Light purple	28
0.12	Light purple - easily seen	14
0 (no Cr (VI))	Colorless	0

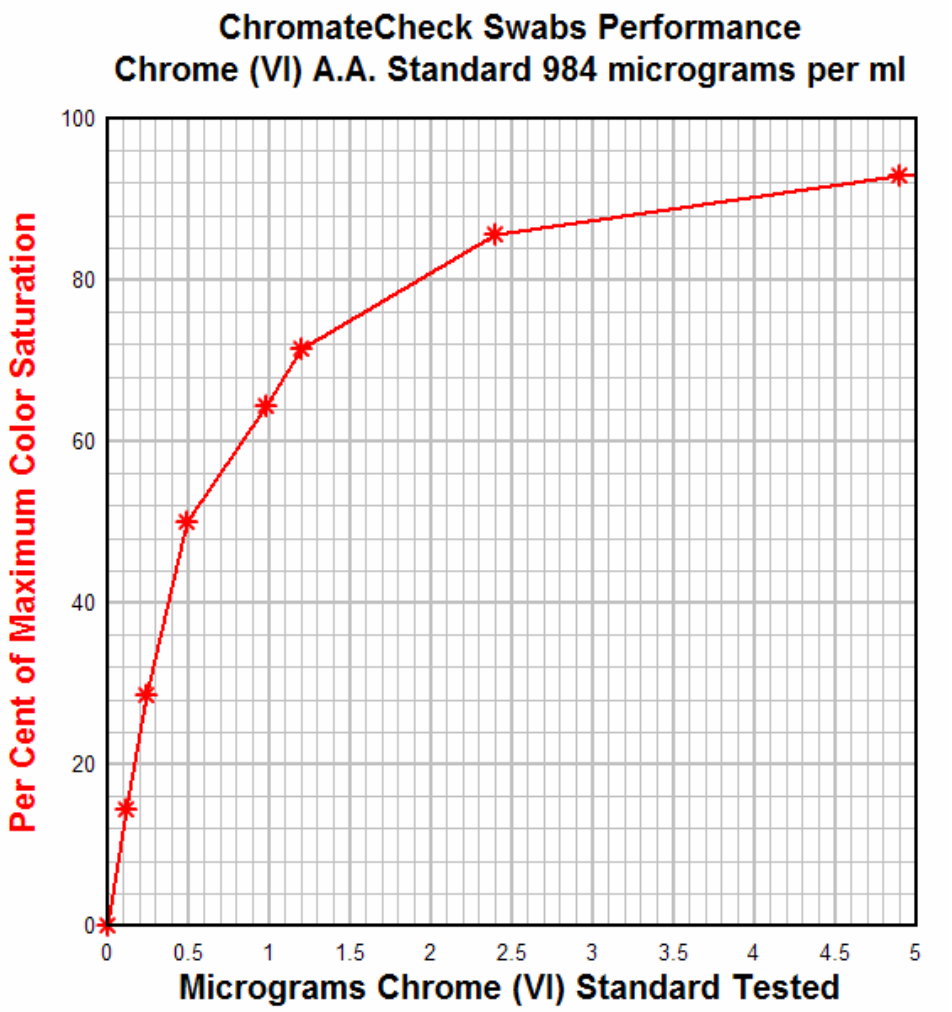
These reactions were repeated five times with the same results. A clear gradation of color was observed and an arbitrary rating was assigned to each with 7+ indicating the 100% color saturation.

III. Specificity

ChromateCheck™ Swabs are quite specific for chromate. High levels of mercuric chloride (5mg/ml) interfere with color development, however at 1.5 mg/ml no interference is observed. High concentrations of molybdate may interfere with color development.

IV. Reaction with Lead Chromate paint

ChromateCheck™ Swabs (CR8E) detect chromate in lead chromate paint at the same levels as found for the potassium chromate standard.



Legend

Standard curves were developed using several lots of the new version of ChromateCheck™ Swabs. A standard solution of 984 micrograms/ml chromate was diluted to produce the concentrations used in each series of experiments. The results of several curves were averaged and have been summarized in the above graph. The intensity of the purple/pink color developed at each of the concentrations was scored as a percentage of the maximum color developed.