

HexChecks™ Testing Swabs Sensitivity and Specificity

Sensitivity

HexChecks Testing Swabs reliably detects levels of hexavalent chromium below 0.1 micrograms. Low levels of hexavalent chromium show as light pink. Higher levels of hexavalent chromium will show as darkening pink to purple color development.

Specificity

HexChecks Testing Swabs are highly specific to hexavalent chromium. To demonstrate selectivity and understand any interferences, HexChecks Testing Swabs were tested against a selection of metals and metal salts that may be encountered at worksites.

Atomic Absorption Spectroscopy (AAS) standards and pure metals were obtained from established suppliers such as Alfa Aesar and Millipore Sigma. 1 milliliter of each material was placed into a Teflon dish. A hex check was rubbed into each solution. Samples sat undisturbed for 5 minutes to allow any color to develop.

Material	Concentration	Color Change
Iron [as Iron(III) Nitrate]	10mg/mL	None
Tin [as Tin(II) Chloride]	10mg/mL	None
Copper [as Copper(II) Sulfate]	10mg/mL	None
Cadmium [as Cadmium(II) Nitrate]	10mg/mL	None
Zinc [as Zinc(II) Nitrate]	10mg/mL	None
Silver [as Silver(I) Nitrate]	10mg/mL	None
Cobalt [as Cobalt(II) Nitrate]	10mg/mL	None
Magnesium [as Magnesium(II) Nitrate]	10mg/mL	None
Nickel [as Nickel(II) Nitrate]	1mg/mL	None
Chromium [as Ammonium Dichromate(VI)]	1mg/mL	Purple
Chromium [as Strontium Chromate(VI)]	1mg/mL	Purple
Chromium [as Chromium(III) Oxide]	10mg/mL	None
Lead [as Lead(II) Nitrate]	1mg/mL	None
Aluminum [as Aluminum(III) Chloride]	1mg/mL	None
Selenium [as Selenium(IV) Oxide]	1mg/mL	None
Arsenic [as Arsenic (III) Nitrate]	1mg/mL	None
Titanium [as Titanium (IV) Chloride]	1mg/mL	None
Thallium [as Thallium(I) Nitrate]	1mg/mL	None
Iron [metallic]	bar stock	None
Aluminum [metallic]	bar stock	None
Copper [metallic]	bar stock	None
Chromium [metallic]	bar stock	None
Silver [metallic]	bar stock	None
Titanium [metallic]	bar stock	None