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Ceric Sulfate,

$Ce(SO_4)_2$with a variable amount of water (anhydrous) 332.24 CAS RN®: 13590-82-4.—It may also contain sulfates of other associated rare earth elements. Yellow to orange-yellow crystals or crystalline powder. Practically insoluble in cold water; slowly soluble in cold dilute mineral acids, but more readily soluble when heated with these solvents.

• **Assay:** Weigh accurately about 800 mg, transfer to a flask, add 25 mL of water and 3 mL of sulfuric acid, and warm until dissolved. Cool, and add 60 mL of a mixture of 1 volume of phosphoric acid and 20 volumes of water. Add 25 mL of potassium iodide solution (1 in 10), insert the stopper in the flask, and allow to stand for 15 minutes. Replace the air over the solution with carbon dioxide, and while continuing the flow of carbon dioxide into the flask, titrate the liberated iodine with 0.1 N sodium thiosulfate VS, adding 3 mL of starch TS as the endpoint is approached. Each mL of 0.1 N sodium thiosulfate is equivalent to 33.22 mg of $Ce(SO_4)_2$. Not less than 80.0% is found.

• **Chloride** (Reagent test)**:** Dissolve 1 g in a mixture of 5 mL of nitric acid and 4 mL of water. Filter, if necessary, and dilute with water to 20 mL. To 10 mL of the dilution add 1 mL of silver nitrate TS, allow to stand for 10 minutes, and filter until clear. To the remaining 10 mL of test solution add 1 mL of silver nitrate TS: any turbidity produced does not exceed that in a control prepared by adding 0.05 mg of Cl to the filtrate obtained from the first 10 mL of test solution (0.01%).

• **Heavy Metals:** Heat 500 mg with a mixture of 10 mL of water and 0.5 mL of sulfuric acid until solution is complete. Cool, dilute with water to 50 mL, and bubble hydrogen sulfide gas through the solution until it is saturated: the precipitate that is formed is white or not darker than pale yellow.

• **Iron:** Dissolve 100 mg in a mixture of 5 mL of water and 2 mL of hydrochloric acid, warming if necessary, and cool. Transfer to a glass-stoppered cylinder, dilute with water to 25 mL, and add 5 mL of ammonium thiocyanate TS and 25 mL of ether. Shake gently, but well, and allow the layers to separate: any pink color in the ether layer is not darker than that of a control, similarly prepared, containing 0.02 mg of added Fe (0.02%).

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
CERIC SULFATE	Margareth R.C. Marques Principal Scientific Liaison	HDQ Headquarters

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