

Zinc oxide (Zinci oxydum)**Molecular formula.** ZnO**Relative molecular mass.** 81.38**Chemical name.** Zinc oxide; CAS Reg. No. 1314-13-2.**Description.** A white or faintly yellowish white, very fine, amorphous powder, free from grittiness; odourless.**Solubility.** Practically insoluble in water and ethanol (~750 g/l) TS; soluble in hydrochloric acid (~70 g/l) TS.**Category.** Mild astringent used topically as a protective.**Storage.** Zinc oxide should be kept in a well-closed container.**Additional information.** Zinc oxide gradually absorbs carbon dioxide from the air.**Requirements****Definition.** Zinc oxide contains not less than 99.0% and not more than 100.5% of ZnO, calculated with reference to the freshly ignited substance.**Identity tests**

A. Heat strongly a small amount of the substance; it assumes a yellow colour, which disappears on cooling.

B. Dissolve 20 mg in 2.0 mL of hydrochloric acid (~70 g/l) TS, add 0.15 mL of potassium ferrocyanide (45 g/l) TS; a greenish white precipitate is formed.

Arsenic. Use a solution of 1.6 g in 35 mL of hydrochloric acid (~70 g/l) TS and proceed as described under [2.2.5 Limit test for arsenic](#); the arsenic content is not more than 6 µg/g.**Carbonates and acid-insoluble substances.** Mix 2.0 g with 10 mL of water, add 30 mL of sulfuric acid (~100 g/l) TS, and heat on a water-bath with constant stirring; no effervescence occurs and the resulting solution is clear and colourless.**Iron.** Dissolve 0.20 g in 5 mL of hydrochloric acid (~250 g/l) TS and 30 mL of water. Treat the solution as described under [2.2.4 Limit test for iron](#); not more than 200 µg/g.**Lead.** Add 2 g to 20 mL of water, stir well, add 5 mL of glacial acetic acid R, and warm on a water-bath until solution is effected. Then add 0.25 mL of potassium chromate (100 g/l) TS; no turbidity or precipitate is produced.**Loss on ignition.** Ignite 1.0 g at 500 °C to constant weight; it loses not more than 10 mg/g.**Alkalinity.** Mix 1 g with 10 mL of hot water, add 0.1 mL of phenolphthalein/ ethanol TS and filter; if the filtrate is red, not more than 0.3 mL of hydrochloric acid (0.1 mol/l) VS is required to discharge the colour.**Assay.** Dissolve about 0.15 g, accurately weighed, in 10 mL of acetic acid (~120 g/l) TS and proceed with the titration as described under [2.5 Complexometric titrations](#) for zinc. Each mL of disodium edetate (0.05 mol/l) VS is equivalent to 4.069 mg of ZnO.