

Serine

$C_3H_7NO_3$

105.09

L-Serine.

L-Serine [5645-1].

Serine contains not less than 98.5 percent and not more than 101.5 percent of $C_3H_7NO_3$, as L-serine, calculated on the dried basis.

Serine: White, odorless crystals, having a sweet taste. Soluble in water; practically insoluble in absolute alcohol and in ether.

Packaging and storage—Preserve in well-closed containers. USP Reference standards (11) USP L-Serine RS.

Identification, Infrared Absorption (197K). Specific rotation (781S): between +13.6° and +15.6°. Test solution 100 mg per mL, in 2 N hydrochloric acid.

Loss on drying (731)—Dry it at 105° for 3 hours: it loses not more than 0.2% of its weight.

Residue on ignition (281): not more than 0.1%.

Chloride (221)—A 0.73-g portion shows no more chloride than corresponds to 0.50 mL of 0.020 N hydrochloric acid (0.05%).

Sulfate (221)—A 0.33-g portion shows no more sulfate than corresponds to 0.10 mL of 0.020 N sulfuric acid (0.03%).

Arsenic (211): 1.5 ppm. Iron (241): 0.003%. Heavy metals, Method I (231): 0.0015%.

Organic volatile impurities, Method I (467): meets the requirements.

Assay—Transfer about 100 mg of Serine, accurately weighed, to a 125-mL flask, dissolve in a mixture of 3 mL of formic acid and 50 mL of glacial acetic acid, and titrate with 0.1 N perchloric acid VS, determining the endpoint potentiometrically. Perform a blank determination, and make any necessary correction. Each mL of 0.1 N perchloric acid is equivalent to 10.51 mg of $C_3H_7NO_3$.