Status: Currently Official on 14-Feb-2025
Official Date: Official as of 01-Jun-2023
Document Type: USP Monographs
DocId: GUID-9BB0AA10-FEF6-4425-9735-F7A36245AC46_2_en-US
DOI: https://doi.org/10.31003/USPNF_M9780_02_01
DOI Ref: s2ebo

Bismuth Subnitrate

$Bi_5O(OH)_9(NO_3)_4$ 1461.99

Bismuth hydroxide nitrate oxide $Bi_5O(OH)_9(NO_3)_4$.

Bismuth hydroxide nitrate oxide $Bi_5O(OH)_9(NO_3)_4$ CAS RN®: 1304-85-4; UNII: H19J064BA5.

» Bismuth Subnitrate is a basic salt that contains the equivalent of not less than 79.0 percent of bismuth trioxide (Bi_2O_3), calculated on the dried basis.

Packaging and storage—Preserve in well-closed containers.

Identification—It responds to the tests for *Bismuth* ⟨191⟩ and for *Nitrate* ⟨191⟩.

Loss on drying ⟨731⟩—Dry it at 105° for 2 hours: it loses not more than 3.0% of its weight.

Carbonate—Add 3 g to 3 mL of warm nitric acid: no effervescence occurs. Pour the solution into 100 mL of water: a white precipitate forms. Filter, evaporate the filtrate on a steam bath to 30 mL, again filter the liquid, divide the latter filtrate into portions of 5 mL each, and use these several portions in the tests for *Chloride, Sulfate, Copper, Lead,* and *Silver.*

Chloride ⟨221⟩—A 10-mL portion of the test liquid retained in the test for *Carbonate* shows no more chloride than corresponds to 0.50 mL of 0.020 N hydrochloric acid (0.035%).

Sulfate ⟨221⟩—To a 5-mL portion of the test liquid retained in the test for *Carbonate* add 5 drops of barium nitrate TS: no turbidity is produced immediately.

Limit of ammonium salts—Boil about 100 mg with 5 mL of 1 N sodium hydroxide: the vapor does not turn moistened red litmus paper blue.

Change to read:

▲**Arsenic** ⟨211⟩, *Procedures, Procedure 1*▲ (CN 1-Jun-2023) —Mix 375 mg with 5 mL of water, cautiously add 2 mL of sulfuric acid, and heat the mixture until fumes of sulfur trioxide are copiously evolved. Cool, cautiously add 10 mL of water, and again evaporate to strong fuming, repeating, if necessary, to remove any trace of nitric acid. The limit is 8 ppm.

Copper—To a 5-mL portion of the test liquid retained in the test for *Carbonate* add a slight excess of 6 N ammonium hydroxide: the liquid does not exhibit a bluish color.

Lead—Mix a 5-mL portion of the test liquid retained in the test for *Carbonate* with an equal volume of 2 N sulfuric acid: the liquid does not become cloudy.

Silver—To a 5-mL portion of the test liquid retained in the test for *Carbonate* add hydrochloric acid, dropwise: no precipitate is formed that is insoluble in a slight excess of hydrochloric acid, but that is soluble in 6 N ammonium hydroxide.

Limit of alkalies and alkaline earths—Boil 1.0 g with 20 mL of a mixture of equal volumes of 6 N acetic acid and water, cool, and filter. Add 2 mL of 3 N hydrochloric acid, precipitate the bismuth by the addition of hydrogen sulfide, boil the mixture, and filter it. Add 5 drops of sulfuric acid to the filtrate, evaporate to dryness, and ignite to constant weight: the weight of the residue does not exceed 5 mg (0.5%).

Assay—Transfer about 400 mg of Bismuth Subnitrate, accurately weighed, to a 250-mL beaker. Add 5 mL of water, then add 2 mL of nitric acid, and warm, if necessary, to effect solution. Dilute with water to 100 mL, add 0.3 mL of xylenol orange TS, and titrate with 0.05 M edetate disodium VS to a yellow endpoint. Each mL of 0.05 M edetate disodium is equivalent to 11.65 mg of Bi_2O_3.

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

Topic/Question	Contact	Expert Committee
BISMUTH SUBNITRATE	Documentary Standards Support	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. Information currently unavailable

Current DocID: GUID-9BB0AA10-FEF6-4425-9735-F7A36245AC46_2_en-US
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