

Status: Currently Official on 13-Feb-2025  
 Official Date: Official as of 01-Nov-2020  
 Document Type: Reagents  
 DocId: GUID-23D52C2F-A6E0-4BA2-AEB6-584D08A13877\_2\_en-US  
 DOI: [https://doi.org/10.31003/USPNF\\_R6890\\_02\\_01](https://doi.org/10.31003/USPNF_R6890_02_01)  
 DOI Ref: 4s0rt

© 2025 USPC  
 Do not distribute

**Change to read:**

# 0.05 M Barium Perchlorate VS

▲▲ (USP 1-Aug-2020)

**Diluted acetic acid solution:** Transfer 28.5 mL of [glacial acetic acid](#) to a 100-mL volumetric flask. Dilute with [water](#) to volume.

**Diluted ammonia solution:** Transfer 75 mL of [stronger ammonia water](#) to a 100-mL volumetric flask. Dilute with [water](#) to volume.

**Buffer solution pH 3.7:** Transfer 15.0 mL of *Diluted acetic acid solution* to a 100-mL volumetric flask. Add 60 mL of [alcohol](#) and 20 mL of [water](#). Adjust with *Diluted ammonia solution* to a pH of 3.7. Dilute with [water](#) to volume.

▲▲ (USP 1-Aug-2020)

**Barium perchlorate solution:** Dissolve 15.8 g of [barium hydroxide](#) in a mixture of 7.5 mL of [perchloric acid](#) and 75 mL of [water](#). Adjust with [perchloric acid](#) to a pH of 3 and filter if necessary. Add 150 mL of [alcohol](#) and dilute with [water](#) to 250 mL. Dilute with *Buffer solution pH 3.7* to 1000 mL.

**Standardization**

▲See [Volumetric Solutions, 1. Definitions](#).

See [Titrimetry \(541\)](#).

Standardize by one of the following procedures. [NOTE—Other standardization procedures may be used. See [Volumetric Solutions, 2. Preparation and Standardization, 2.3 Standardization](#).]

**Standardization with visual endpoint**

**0.1 N sulfuric acid:** Transfer 10 mL of [1 N sulfuric acid VS](#) to a 100 mL volumetric flask and dilute to volume with [water](#).▲ (USP 1-Aug-2020)

To 5.0 mL of ▲0.1 N sulfuric acid▲ (USP 1-Aug-2020) add 5 mL of [water](#), 50 mL of *Buffer solution pH 3.7*, and 0.5 mL of [sodium alizarinsulfonate TS](#). Titrate with the *Barium perchlorate solution* until an orange-red color appears. Standardize immediately before use.

$$M = \frac{\text{mL sulfuric acid} \times N \text{ sulfuric acid} \times 0.5}{\text{mL barium perchlorate}}$$

**Standardization with potentiometric endpoint**

**Ammonia buffer solution pH 10:** Transfer 54 g of [ammonium chloride](#) to a 1000 mL volumetric flask containing about 200 mL of [water](#), swirl until dissolved. Add 350 mL of [25% ammonia water](#). Dilute to volume with [water](#).

To 50 mL of [water](#), add 10.0 mL of 0.05 M barium perchlorate solution, 5 mL of *Ammonia buffer solution pH 10* and 1 mL of [Copper-EDTA complex solution](#). Titrate potentiometrically with [0.05 M edetate disodium VS](#) using a copper ion-selective electrode. Standardize immediately before use.

$$M = \frac{\text{mL edetate solution} \times N \text{ edetate solution}}{\text{mL barium perchlorate}} \quad \blacktriangle (USP 1-Aug-2020)$$

[NOTE—If this volumetric solution is used in a qualitative application such as pH adjustment, dissolution medium, or diluent, its standardization is not required.]

**Auxiliary Information** - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
0.05 M BARIUM PERCHLORATE VS	<a href="#">Margareth R.C. Marques</a> Principal Scientific Liaison	HDQ Headquarters

**Most Recently Appeared In:**  
 Pharmacopeial Forum: Volume No. 45(2)

**Current DocId:** [GUID-23D52C2F-A6E0-4BA2-AEB6-584D08A13877\\_2\\_en-US](#)

**DOI:** [https://doi.org/10.31003/USPNF\\_R6890\\_02\\_01](https://doi.org/10.31003/USPNF_R6890_02_01)

**DOI ref:** [4s0rt](#)