

Status: Currently Official on 14-Feb-2025
 Official Date: Official Prior to 2013
 Document Type: Reagents
 DocId: GUID-FE4BD10A-126A-40E0-BB9C-F3ED8D04E1A1_1_en-US
 DOI: https://doi.org/10.31003/USPNF_R1870_01_01
 DOI Ref: tc8du

© 2025 USPC
 Do not distribute

3,3'-Diaminobenzidine Hydrochloride,

$(\text{NH}_2)_2\text{C}_6\text{H}_3\text{C}_6\text{H}_3(\text{NH}_2)_2 \cdot 4\text{HCl}$ 360.11 CAS RN[®]: 7411-49-6.—White to yellowish-tan (occasionally purple), needle-shaped crystals.

Soluble in water. Stable in organic solvents but unstable in aqueous solution at room temperature. Store aqueous solutions in a refrigerator.

Insoluble Matter: Dissolve 2 g in 100 mL of water, without heating, and filter immediately: the insoluble residue does not exceed 1 mg (0.05%).

Residue on Ignition (Reagent test): not more than 1 mg, from 2 g (0.05%).

Suitability Test for Detection of Selenium: Dissolve 1.633 g of selenious acid (H_2SeO_3) in water, and dilute with water to 1 L. Dilute 10 mL of this solution with water to 1 L, to make a solution containing 0.010 mg of Se per mL. Place 1 mL of the resulting solution in a 100-mL beaker, add 2 mL of formic acid solution (1 in 7), and dilute with water to 50 mL. Add 2 mL of 3,3'-diaminobenzidine hydrochloride solution (1 in 200), and allow to stand for 30 to 50 minutes. Adjust with 6 N ammonium hydroxide to a pH between 6 and 7. Transfer to a 125-mL separator, add 10.0 mL of toluene, and shake vigorously for 30 seconds: a distinct yellow color is produced in the toluene layer. A blank containing diaminobenzidine hydrochloride but no selenium standard, treated in the same manner, shows no color in the toluene layer.

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

Topic/Question	Contact	Expert Committee
3,3'-DIAMINO BENZIDINE HYDROCHLORIDE	Margareth R.C. Marques Principal Scientific Liaison	HDQ Headquarters

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. Information currently unavailable

Current DocId: [GUID-FE4BD10A-126A-40E0-BB9C-F3ED8D04E1A1_1_en-US](#)

DOI: https://doi.org/10.31003/USPNF_R1870_01_01

DOI ref: [tc8du](#)