Status: Currently Official on 13-Feb-2025
Official Date: Official as of 01-Jan-2018
Document Type: USP Monographs
DocId: GUID-6627DB95-69ED-46CE-A322-9F73A0913C06_3_en-US
DOI: https://doi.org/10.31003/USPNF_M2362_03_01
DOI Ref: qwb8q

Aluminum Zirconium Pentachlorohydrex Gly

» Aluminum Zirconium Pentachlorohydrex Gly is a derivative of Aluminum Zirconium Pentachlorohydrate in which some of the water molecules have been displaced by glycine, calcium glycinate, magnesium glycinate, potassium glycinate, sodium glycinate, or zinc glycinate. It encompasses a range of aluminum-to-zirconium atomic ratios between 6.0:1 and 10.0:1 and a range of (aluminum plus zirconium)-to-chloride atomic ratios between 2.1:1 and 1.51:1. It contains not less than 90.0 percent and not more than 110.0 percent of the labeled amount of anhydrous aluminum zirconium pentachlorohydrate.

Packaging and storage—Preserve in well-closed containers.

Labeling—The label states the form of glycine used and the claimed content of anhydrous aluminum zirconium pentachlorohydrate.

Identification—

A: A solution (1 in 10) responds to the test for *Chloride* ⟨191⟩.

B: Place about 0.5 g of it in a 50-mL beaker, add about 20 mL of water, and swirl to dissolve. Heat to boiling on a hot plate, and add about 60 mg of ninhydrin: a deep violet color immediately develops.

pH ⟨791⟩**:** between 3.0 and 5.0, in a solution [15 in 100 (w/w)].

Arsenic, *Method I* ⟨211⟩**:** 2 µg per g.

Limit of iron—Using Aluminum Zirconium Pentachlorohydrex Gly instead of Aluminum Zirconium Octachlorohydrate, proceed as directed in the test for *Limit of iron* under *Aluminum Zirconium Octachlorohydrate*. The specified result is obtained (150 µg per g limit).

Content of aluminum—Using Aluminum Zirconium Pentachlorohydrex Gly instead of Aluminum Zirconium Octachlorohydrate, proceed as directed in the test for *Content of aluminum* under *Aluminum Zirconium Octachlorohydrate*. Use the result obtained to calculate the *Aluminum/zirconium atomic ratio* and the (*Aluminum plus zirconium*)/*chloride atomic ratio*.

Content of zirconium—Using Aluminum Zirconium Pentachlorohydrex Gly instead of Aluminum Zirconium Octachlorohydrate, proceed as directed in the test for *Content of zirconium* under *Aluminum Zirconium Octachlorohydrate*. Use the result obtained to calculate the *Aluminum/zirconium atomic ratio* and the (*Aluminum plus zirconium*)/*chloride atomic ratio*.

Aluminum/zirconium atomic ratio—Divide the percentage of aluminum found in the test for *Content of aluminum* by the percentage of zirconium found in the test for *Content of zirconium*, and multiply by 92.97/26.98, in which 92.97 is the atomic weight of zirconium corrected for 2% hafnium content, and 26.98 is the atomic weight of aluminum: the ratio is between 6.0:1 and 10.0:1.

Content of chloride—Using Aluminum Zirconium Pentachlorohydrex Gly instead of Aluminum Zirconium Octachlorohydrate, proceed as directed in the test for *Content of chloride* under *Aluminum Zirconium Octachlorohydrate*. Use the result obtained to calculate the (*Aluminum plus zirconium*)/*chloride atomic ratio*.

(Aluminum plus zirconium)/chloride atomic ratio—Calculate the (aluminum plus zirconium)/chloride atomic ratio by the formula:

$$[(Al/26.98) + (Zr/92.97)]/(Cl/35.453)$$

in which *Al*, *Zr*, and *Cl* are the percentages of aluminum, zirconium, and chloride as determined in the tests for *Content of aluminum*, *Content of zirconium*, and *Content of chloride*, respectively; 26.98 is the atomic weight of aluminum; 92.97 is the atomic weight of zirconium corrected for 2% hafnium content; and 35.453 is the atomic weight of chlorine: the ratio is between 2.1:1 and 1.51:1.

Assay—Calculate the percentage of anhydrous aluminum zirconium pentachlorohydrate in the Aluminum Zirconium Pentachlorohydrex Gly by the formula:

$$Al(\{26.98y + 92.97 + 17.01[3y + 4 - (y + 1)/z] + 35.453(y + 1)/z\}/26.98y)$$

in which *Al* is the percentage of aluminum found in the test for *Content of aluminum*, *y* is the aluminum/zirconium atomic ratio found in the test for *Aluminum/zirconium atomic ratio*, *z* is the (aluminum plus zirconium)/chloride atomic ratio found in the test for (*Aluminum plus zirconium*)/*chloride atomic ratio*, 26.98 is the atomic weight of aluminum, 92.97 is the atomic weight of zirconium corrected for 2% hafnium content, 17.01 is the molecular weight of the hydroxide anion (OH), and 35.453 is the atomic weight of chlorine (Cl).

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

Topic/Question	Contact	Expert Committee
ALUMINUM ZIRCONIUM PENTACHLOROHYDREX GLY	Documentary Standards Support	SM32020 Small Molecules 3

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. PF 27(4)

Current DocID: GUID-6627DB95-69ED-46CE-A322-9F73A0913C06_3_en-US
Previous DocID: GUID-6627DB95-69ED-46CE-A322-9F73A0913C06_1_en-US
DOI: https://doi.org/10.31003/USPNF_M2362_03_01
DOI ref: qwb8q