

§ 442.216 Ceftazidime injectable dosage forms.**§ 442.216a Ceftazidime pentahydrate for injection.**

(a) *Requirements of certification—(1) Standards of identity, strength, quality, and purity.* Ceftazidime pentahydrate for injection is a dry mixture of ceftazidime pentahydrate and sodium carbonate or *L*-arginine. Its ceftazidime potency is satisfactory if each milligram of ceftazidime pentahydrate for injection contains not less than 900 micrograms and not more than 1,050 micrograms of ceftazidime activity when corrected for both loss on drying and its sodium carbonate or *L*-arginine content, as appropriate for the formulation. Its ceftazidime content is satisfactory if it is not less than 90 percent and not more than 120 percent of the number of milligrams of ceftazidime that it is represented to contain. It is sterile. It is nonpyrogenic. Its loss on drying is not more than 12.5 percent if it contains *L*-arginine and not more than 13.5 percent if it contains sodium carbonate. The pH of its aqueous solution is not less than 5.0 and not more than 7.5. Its pyridine content, if it contains sodium carbonate, is not more than 0.4 percent, except that for the issuance of a certificate for each batch of the sodium carbonate formulation, the pyridine content is not more than 0.12 percent. Its pyridine content, if it contains *L*-arginine, is not more than 0.3 percent, except that for the issuance of a certificate, the pyridine content of the *L*-arginine formulation is not more than 0.10 percent. The ceftazidime pentahydrate conforms to the standard prescribed by § 442.16a(a)(1).

(2) *Labeling.* In addition to the requirements of § 432.5 of this chapter, each package of the *L*-arginine formulation shall bear on its outside wrapper or container and on the immediate container the statement “For Patients 12 years and Older”.

(3) *Requests for certification; samples.* In addition to complying with the requirements of § 431.1 of this chapter, each such request shall contain:

(i) Results of tests and assays on:

(a) The ceftazidime pentahydrate used in making the batch for potency,

loss on drying, pH, crystallinity, identity, and high molecular weight polymer content.

(b) The batch for ceftazidime potency, ceftazidime content, sterility, pyrogens, loss on drying, pH, and pyridine content.

(ii) Samples, if required by the Director, Center for Drug Evaluation and Research:

(a) The ceftazidime pentahydrate used in making the batch: 10 packages, each containing approximately 500 milligrams.

(b) The batch:

(1) For all tests except sterility: A minimum of 10 immediate containers.

(2) For sterility testing: 20 immediate containers, collected at regular intervals throughout each filling operation.

(b) *Tests and methods of assay—(1) Ceftazidime potency and content.* Determine both micrograms of ceftazidime per milligram of sample and milligrams of ceftazidime per container. Proceed as directed in § 442.16a(b)(1), preparing the sample solutions and calculating the potency and content as follows:

(i) *Preparation of sample solutions.* Use separate containers for preparation of each sample solution as described in paragraphs (b)(1)(i) (a) and (b) of this section.

(a) *Ceftazidime potency (micrograms of ceftazidime per milligram).* Accurately weigh and dissolve approximately 350 milligrams of ceftazidime sample in distilled water and dilute to volume in a 250-milliliter volumetric flask to obtain a stock solution containing approximately 1,000 micrograms of ceftazidime per milliliter. Mix well. Immediately prior to chromatography, further dilute 5 milliliters of stock solution to 50 milliliters with water to obtain a solution containing 100 micrograms of ceftazidime activity per milliliter (estimated).

(b) *Ceftazidime content (milligrams of ceftazidime per vial).* Reconstitute the sample as directed in the labeling. Then, using a suitable hypodermic needle and syringe, remove all of the withdrawable contents if it is represented as a single-dose container; or, if the labeling specifies the amount of