

from each container. Dilute with sufficient solution 6 to give a stock solution of convenient concentration. Further dilute an aliquot of the stock solution with solution 6 to the reference concentration of 10 units of polymyxin B per milliliter (estimated).

(2) *Sterility*. Proceed as directed in § 436.20 of this chapter, using the method described in paragraph (e)(1) of that section.

(3) *Pyrogens*. Proceed as directed in § 436.32(a) of this chapter, using a solution containing 20,000 units of polymyxin B per milliliter.

(4) [Reserved]

(5) *Loss on drying*. Proceed as directed in § 436.200(b) of this chapter.

(6) *pH*. Proceed as directed in § 436.202 of this chapter, using an aqueous solution containing 5 milligrams per milliliter.

(7) *Residue on ignition*. Proceed as directed in § 436.207(a) of this chapter.

(8) *Heavy metals*. Proceed as directed in § 436.208 of this chapter.

(9) *Identity*. (i) To a solution of 2 milligrams of polymyxin B sulfate in 5 milliliters of water, add 0.5 milliliter of triketohydrindene solution (1:1,000) and 2 drops of pyridine, boil for 1 minute, and cool; a blue color develops; and

(ii) To a solution of 2 milligrams of polymyxin B sulfate in 5 milliliters of water, add 5 milliliters of sodium hydroxide solution (1:10), mix well, and add, dropwise, 5 drops of cupric sulfate solution (1:100), mixing after the addition of each drop; a reddish-violet color is produced.

[39 FR 19115, May 30, 1974, as amended at 46 FR 16683, Mar. 13, 1981; 46 FR 22359, Apr. 17, 1981; 50 FR 19920, May 13, 1985]

§ 448.75 Tyrothricin.

(a) *Requirements for certification—(1) Standards of identity, strength, quality, and purity*. Tyrothricin is a white to brownish-white compound of a kind of tyrothricin or a mixture of two or more such compounds. It consists principally of gramicidin and tyrocidine. It is so purified and dried that:

(i) Its potency is not less than 900 micrograms and not more than 1,400 micrograms of tyrothricin per milligram.

(ii) Its loss on drying is not more than 5 percent.

(iii) It gives a positive identity test for tyrothricin.

(2) *Labeling*. It shall be labeled in accordance with the requirements of § 432.5 of this chapter.

(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 the batch for potency, loss on drying, and identity.

(ii) Samples required: five packages, each containing approximately 300 milligrams.

(b) *Tests and methods of assay—(1) Potency*. Proceed as directed in § 436.106 of this chapter, preparing the sample for assay as follows: Dissolve an accurately weighed sample in sufficient 95 percent ethyl alcohol, U.S.P. XVIII or equivalent, to give a stock solution of convenient concentration. Further dilute the stock solution with 95 percent ethyl alcohol, U.S.P. XVIII or equivalent, to the reference concentration of 0.20 microgram of tyrothricin per milliliter (estimated). Average the absorbance values for the tyrothricin sample and read the gramicidin concentration from the gramicidin standard response line. Multiply by 5 to obtain the number of micrograms of tyrothricin in the sample.

(2) *Loss on drying*. Proceed as directed in § 436.200(b) of this chapter.

(3) *Identity*. To 5 milliliters of *p*-dimethylaminobenzaldehyde (T.S.) add about 5 milligrams of tyrothricin. Shake well for 2 minutes; then add 2 drops of 0.1M sodium nitrite and 5 milliliters of water. A blue color is produced.

Subpart B—Oral Dosage Forms

§ 448.121 Colistin sulfate for oral suspension.

(a) *Requirements for certification—(1) Standards of identity, strength, quality, and purity*. Colistin sulfate for oral suspension is a dry mixture of colistin sulfate, with or without one or more suitable and harmless buffer substances, suspending and dispersing agents, diluents, colorings, and flavorings. The colistin sulfate content is 5.0 milligrams of colistin per milliliter of the reconstituted suspension. Its potency

is satisfactory if it is not less than 90 percent and not more than 120 percent of the number of milligrams of colistin that it is represented to contain. The loss on drying is not more than 3.0 percent. The pH of the reconstituted suspension is not less than 5.0 and not more than 6.0. The colistin sulfate used conforms to the standards prescribed by § 448.21(a)(1).

(2) *Labeling.* It shall be labeled as prescribed in § 432.5 of this chapter.

(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 colistin sulfate used in making the batch for potency, loss on drying, pH, and identity.

(b) The batch for potency, loss on drying, and pH.

(ii) Samples required:

(a) The colistin sulfate used in making the batch: 10 packages, each containing approximately 300 milligrams.

(b) The batch: A minimum of 6 immediate containers.

(b) *Tests and methods of assay*—(1) *Potency.* Proceed as directed in § 436.105 of this chapter, preparing the sample for assay as follows: Reconstitute the suspension as directed in the label. Remove an accurately measured representative portion of the reconstituted suspension with a hypodermic needle and syringe and dilute with 10 percent potassium phosphate buffer, pH 6.0 (solution 6), to the reference concentration of 1.0 microgram of colistin per milliliter (estimated).

(2) *Loss on drying.* Proceed as directed in § 436.200(b) of this chapter.

(3) *pH.* Proceed as directed in § 436.202 of this chapter, using the suspension when reconstituted as directed in the labeling.

[39 FR 19115, May 30, 1974, as amended at 50 FR 19920, May 13, 1985]

§ 448.123 Cyclosporine oral dosage forms.

§ 448.123a Cyclosporine oral solution.

(a) *Requirements for certification*—(1) *Standards of identity, strength, quality, and purity.* Cyclosporine oral solution contains, in each milliliter, 100 milligrams of cyclosporine in a suitable and

harmless alcohol-vegetable oil solution. Its cyclosporine content is satisfactory if it is not less than 90 percent and not more than 110 percent of the number of milligrams of cyclosporine that it is represented to contain. The cyclosporine used conforms to the standards prescribed by § 448.23, except heavy metals.

(2) *Labeling.* It shall be labeled in accordance with the requirements of § 432.5 of this chapter.

(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 cyclosporine used in making the batch for cyclosporine content, loss on drying, and identity.

(b) The batch for cyclosporine content.

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

(a) The cyclosporine used in making the batch: Six packages, each containing approximately 500 milligrams.

(b) The batch: A minimum of five immediate containers.

(b) *Tests and methods of assay; cyclosporine content.* Proceed as directed in § 436.346 of this chapter, except prepare the working standard and sample solutions and calculate the cyclosporine content as described in paragraphs (b) (1) and (2) of this section. A typically suitable column for cyclosporine dosage forms is 250 millimeters long having an inside diameter of 4 millimeters packed with dimethyl silane chemically bonded to porous silica particles 10 microns in diameter [RP-2 (E.M. Science, S. Plainfield, NJ)].

(1) *Preparation of working standard and sample solutions.*

NOTE: Prepare working standard and sample solutions immediately before analysis.

(i) *Preparation of working standard solution.* Dissolve an accurately weighed portion of the working standard in ethanol by shaking for at least 15 minutes. If necessary, ultrasonicate until the solution becomes completely clear. Dilute with ethanol to obtain a solution containing 1 milligram of cyclosporine activity per milliliter.