

(2) *Moisture.* Proceed as directed in § 436.201 of this chapter.

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

[39 FR 19161, May 30, 1974, as amended at 50 FR 19921, May 13, 1985]

§ 453.121b Clindamycin palmitate hydrochloride for oral solution.

(a) *Requirements for certification—(1) Standards of identity, strength, quality, and purity.* Clindamycin palmitate hydrochloride for oral solution is composed of clindamycin palmitate hydrochloride with one or more suitable and harmless diluents, buffer substances, colorings, flavorings, and preservatives. When reconstituted as directed in the labeling, each milliliter contains clindamycin palmitate hydrochloride equivalent to 15 milligrams of clindamycin. Its clindamycin content is satisfactory if it is not less than 90 percent and not more than 120 percent of the number of milligrams of clindamycin that it is represented to contain. The moisture content is not more than 3.0 percent. When reconstituted as directed in the labeling, its pH is not less than 2.5 and not more than 5.0. The clindamycin palmitate hydrochloride used conforms to the standards prescribed by § 453.21(a)(1).

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

(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 clindamycin palmitate hydrochloride used in making the batch for clindamycin content, moisture, pH, and identity.

(b) The batch for clindamycin content, moisture, and pH.

(ii) Samples required:

(a) The clindamycin palmitate hydrochloride used in making the batch: 10 packages, nine containing not less than 300 milligrams, and one containing not less than 2 grams.

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

(b) *Tests and methods of assay—(1) Clindamycin content.* Proceed as di-

rected in § 436.303 of this chapter, except:

(i) *Preparation of clindamycin palmitate hydrochloride sample and working standard solutions.* Accurately weigh about 130 milligrams of the clindamycin palmitate hydrochloride working standard and transfer to a 25-milliliter volumetric flask. Add 5 milliliters of distilled water. Reconstitute the clindamycin palmitate hydrochloride for oral solution as directed in the labeling and transfer exactly 5.0 milliliters to a 25-milliliter volumetric flask. Add exactly 5.0 milliliters of internal standard and 1 milliliter of 30-percent sodium carbonate to each flask. Shake both flasks mechanically for 5 minutes. Transfer the contents of each flask to separate 15-milliliter glass-stoppered centrifuge tubes and centrifuge. Remove the top aqueous layer by suction and transfer exactly 1.0 milliliter of the chloroform layer to separate glass-stoppered, conical, 15-milliliter centrifuge tubes. Add 1 milliliter of pyridine and 0.5 milliliter of acetic anhydride. Agitate the tubes to insure complete mixing of the liquids. Proceed as directed in § 436.303(e) of this subchapter.

(ii) *Calculations.* Calculate the clindamycin content as follows:

$$\text{Milligrams of clindamycin per milliliter} = \frac{R_u \times W_s \times f}{R_s \times V}$$

where:

R_u =Area of the sample peak (at a retention time equal to that observed for the clindamycin palmitate hydrochloride standard);/Area of internal standard peak;

R_s =Area of the clindamycin palmitate hydrochloride standard peak;/Area of internal standard peak;

W_s =Weight of the clindamycin palmitate hydrochloride working standard in milligrams;

V =Volume of reconstituted sample in milliliters;

f =Milligrams of clindamycin activity per milligram of clindamycin palmitate hydrochloride working standard.

(2) *Moisture.* Proceed as directed in § 436.201 of this subchapter.

(3) *pH*. Proceed as directed in § 436.202 of this subchapter, using the drug reconstituted as directed in the labeling.

[39 FR 19161, May 30, 1974, as amended at 50 FR 19921, May 13, 1985]

§ 453.130 Lincomycin hydrochloride oral dosage forms.

§ 453.130a Lincomycin hydrochloride monohydrate capsules.

(a) *Requirements for certification—(1) Standards of identity, strength, quality, and purity.* Lincomycin hydrochloride monohydrate capsules are composed of lincomycin hydrochloride monohydrate and suitable diluents, enclosed in a gelatin capsule. Each capsule contains 250 milligrams of lincomycin or 500 milligrams of lincomycin. The lincomycin content is satisfactory if it is not less than 90 percent and not more than 120 percent of the number of milligrams of lincomycin that it is represented to contain. Its moisture content is not more than 7.0 percent. The lincomycin hydrochloride monohydrate used conforms to the standards prescribed by § 453.30(a)(1).

(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 lincomycin hydrochloride monohydrate used in making the batch for potency, moisture, pH, specific rotation, infrared absorption spectrum, and identity.

(b) The batch for potency and moisture.

(ii) Samples required:

(a) The lincomycin hydrochloride monohydrate used in making the batch: 10 packages, each containing approximately 300 milligrams.

(b) The batch: A minimum of 30 capsules.

(b) *Tests and methods of assay—(1) Potency.* Use either of the following methods; however, the results obtained from the gas liquid chromatography assay shall be conclusive.

(i) *Microbiological turbidimetric assay.* Proceed as directed in § 436.106 of this chapter, preparing the sample for assay

as follows: Place a representative number of capsules into a high-speed glass blender jar with sufficient sterile distilled water to obtain a stock solution of convenient concentration. Blend for 3 to 5 minutes. Remove an aliquot of the stock solution and further dilute with sterile distilled water to the reference concentration of 0.5 microgram of lincomycin per milliliter (estimated).

(ii) *Gas liquid chromatography assay.* Proceed as directed in § 436.306 of this chapter, except prepare the sample for assay as follows: Place the contents of 5 capsules in a 100-milliliter volumetric flask and add about 60 milliliters of methanol. Place on a steam bath and allow to boil gently for 5 minutes. Remove from the steam bath, add more methanol, and adjust to mark after cooling to ambient temperature. Dilute an aliquot equivalent to 50 milligrams of lincomycin to 25 milliliters with methanol. Transfer 2 milliliters to a centrifuge tube and evaporate to dryness on a steam bath with a stream of dry air. Dissolve the residue in 1 milliliter of dry pyridine. Calculate the lincomycin content of the capsules as follows:

$$\text{Lincomycin content in} \\ \text{milligrams per capsule} = \frac{R_u \times W_s \times d \times f}{R_s \times N}$$

where:

R_u =Area of lincomycin sample peak/Area of internal standard;

R_s =Area of lincomycin standard peak/Area of internal standard;

W_s =Weight of lincomycin working standard in milligrams;

d =Dilution factor;

f =Potency of lincomycin working standard in milligrams of lincomycin per milligram;

N =Number of capsules used.

(2) *Moisture.* Proceed as directed in § 436.201 of this chapter.

[39 FR 19161, May 30, 1974, as amended at 46 FR 3839, Jan. 16, 1981; 50 FR 19921, May 13, 1985]

§ 453.130b Lincomycin hydrochloride syrup.

(a) *Requirements for certification—(1) Standards of identity, strength, quality, and purity.* Lincomycin hydrochloride syrup is a syrup containing lincomycin hydrochloride monohydrate, one or