

## Ophthalmic Ointment Monographs: Neomycin and Polymyxin B Sulfates and Dexamethasone Ophthalmic Ointment

<b>Type of Posting</b>	Revision Bulletin
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<b>Expert Committee</b>	Chemical Medicines Monographs 1 to 6
<b>Reason for Revision</b>	Compliance

In accordance with the Rules and Procedures of the 2015-2020 Council of Experts, the Chemical Medicines Expert Committees 1 to 6 has revised the monographs listed below. The purpose of the revision is to replace the requirement to comply with the entire content of the USP general chapter *Ophthalmic Products—Quality Tests <771>* with a requirement to comply only with the subsection for *Particulate and Foreign Matter* in *Ophthalmic Products—Quality Tests <771>*, and with the section for *Container Content* for those monographs where the requirement for Minimum Fill was deleted.

- Atropine Sulfate Ophthalmic Ointment
- Bacitracin Ophthalmic Ointment
- Bacitracin Zinc and Polymyxin B Sulfate Ophthalmic Ointment
- Bland Lubricating Ophthalmic Ointment
- Chloramphenicol and Polymyxin B Sulfate Ophthalmic Ointment
- Chloramphenicol Ophthalmic Ointment
- Chlortetracycline Hydrochloride Ophthalmic Ointment
- Ciprofloxacin Ophthalmic Ointment
- Dexamethasone Sodium Phosphate Ophthalmic Ointment
- Erythromycin Ophthalmic Ointment
- Gentamicin and Prednisolone Acetate Ophthalmic Ointment
- Gentamicin Sulfate Ophthalmic Ointment
- Hydrocortisone Acetate Ophthalmic Ointment
- Idoxuridine Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates, Bacitracin Zinc, and Hydrocortisone Acetate Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates and Bacitracin Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates and Bacitracin Zinc Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates and Dexamethasone Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates, Bacitracin Zinc, and Hydrocortisone Ophthalmic Ointment
- Neomycin and Polymyxin B Sulfates, Bacitracin, and Hydrocortisone Acetate Ophthalmic Ointment
- Neomycin Sulfate and Dexamethasone Sodium Phosphate Ophthalmic Ointment
- Neomycin Sulfate Ophthalmic Ointment
- Oxytetracycline Hydrochloride and Polymyxin B Sulfate Ophthalmic Ointment
- Sodium Chloride Ophthalmic Ointment
- Sulfacetamide Sodium and Prednisolone Acetate Ophthalmic Ointment
- Sulfacetamide Sodium Ophthalmic Ointment
- Tetracycline Hydrochloride Ophthalmic Ointment
- Tobramycin and Dexamethasone Ophthalmic Ointment
- Tobramycin Ophthalmic Ointment

The Revision Bulletins for the monographs listed above supersede the currently official version of these monographs. The Revision Bulletin will be incorporated in the *First Supplement to USP 40–NF 35*.

Should you have any questions, please contact Margareth R. C. Marques, M.Sc., Ph.D. (301-816-8106 or [mrm@usp.org](mailto:mrm@usp.org)).

## Neomycin and Polymyxin B Sulfates and Dexamethasone Ophthalmic Ointment

### DEFINITION

Neomycin and Polymyxin B Sulfates and Dexamethasone Ophthalmic Ointment contains the equivalent of NLT 90.0% and NMT 130.0% of the labeled amounts of neomycin and polymyxin B, and NLT 90.0% and NMT 110.0% of the labeled amount of dexamethasone ( $C_{22}H_{29}FO_5$ ).

### IDENTIFICATION

- **A. THIN-LAYER CHROMATOGRAPHIC IDENTIFICATION TEST** (201BNP): Meets the requirements
- **B.** The retention time of the dexamethasone peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the Assay for Dexamethasone.

### ASSAY

#### • NEOMYCIN

(See *Antibiotics—Microbial Assays* (81).)

**Sample solution:** Shake a portion of Ophthalmic Ointment in a separator with 50 mL of ether. Extract with four 20-mL portions of *Buffer B.3*. Combine the aqueous extracts, and dilute with *Buffer B.3* to a suitable volume.

**Analysis:** Proceed as directed in the chapter. Dilute the *Sample solution* with *Buffer B.3* to obtain a *Test Dilution* having a neomycin concentration that is nominally equivalent to the median level of the standard.

**Acceptance criteria:** 90.0%–130.0%

#### • POLYMYXIN B

(See *Antibiotics—Microbial Assays* (81).)

**Sample solution:** Shake a portion of Ophthalmic Ointment with 50 mL of ether in a separator. Extract with four 25-mL portions of *Buffer B.6*. Combine the aqueous extracts, and dilute with *Buffer B.6* to a suitable volume.

**Analysis:** Proceed as directed in the chapter. Dilute the *Sample solution* with *Buffer B.6* to obtain a *Test Dilution* having a concentration that is nominally equivalent to the median level of the standard (10 polymyxin B units/mL). Add to each *Test Dilution* of the standard, a quantity of USP Neomycin Sulfate RS, dissolved in *Buffer B.6*, to obtain the same concentration of neomycin as in the *Test Dilution* of the sample.

**Acceptance criteria:** 90.0%–130.0%

### Change to read:

#### • DEXAMETHASONE

**Mobile phase:** Acetonitrile and water (1 in 3) <sup>▲</sup>USP39

**Diluent:** Acetonitrile and methanol (1:1)

**Standard solution:** 60 µg/mL of USP Dexamethasone RS in *Diluent*

**Sample solution:** Nominally 60 µg/mL of dexamethasone from Ophthalmic Ointment in *Diluent* prepared as follows. Transfer a portion of Ophthalmic Ointment containing nominally 3 mg of dexamethasone to a suitable test tube, and add 15 mL of cyclohexane. Heat in a water bath at  $75 \pm 5^\circ$  for 10 min. If the Ophthalmic Ointment is not fully dissolved, heat on a steam bath for about 30 s, place a cap on the test tube, and place on a vortex mixer until all solid material is dissolved. Pass with suction through a medium-porosity, sintered-glass filter. Rinse the test tube twice with 10-mL portions of cyclohexane, passing the rinsings through the filter, and discard the fil-

trate. Wash the filter with about 10 mL of a mixture of *Diluent*, and collect the filtrate in a 50-mL beaker.

Wash the test tube and the filter with several 10-mL portions of *Diluent*, and combine the washings in the 50-mL beaker. Transfer the contents of the beaker to a 50-mL volumetric flask with the aid of *Diluent*, and dilute with *Diluent* to volume.

#### Chromatographic system

(See *Chromatography* (621), *System Suitability*.)

**Mode:** LC

**Detector:** UV 254 nm

**Column:** 4.6-mm × 25-cm; 5- to 10-µm packing L1

**Flow rate:** 2 mL/min

**Injection volume:** 10 µL

#### System suitability

**Sample:** *Standard solution*

**Suitability requirements** <sup>▲</sup>USP39

**Relative standard deviation:** NMT 1.5%

#### Analysis

**Samples:** *Standard solution* and *Sample solution*

Calculate the percentage of the labeled amount of dexamethasone ( $C_{22}H_{29}FO_5$ ) in the portion of Ophthalmic Ointment taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times 100$$

$r_U$  = peak response from the *Sample solution*

$r_S$  = peak response from the *Standard solution*

$C_S$  = concentration of USP Dexamethasone RS in the *Standard solution* (µg/mL)

$C_U$  = nominal concentration of dexamethasone in the *Sample solution* (µg/mL)

**Acceptance criteria:** 90.0%–110.0%

### PERFORMANCE TESTS

#### Delete the following:

- **MINIMUM FILL** (755): Meets the requirements

<sup>▲</sup>USP39

### SPECIFIC TESTS

#### Delete the following:

- **WATER DETERMINATION, Method 1b** (921)

**Analysis:** Use 20 mL of a mixture of toluene and methanol (7:3) in place of methanol in the titration vessel.

**Acceptance criteria:** NMT 0.5%

<sup>▲</sup>USP39

#### Change to read:

- **STERILITY TESTS** (71): <sup>▲</sup>Meets the requirements <sup>▲</sup>USP39

#### Delete the following:

- **METAL PARTICLES IN OPHTHALMIC OINTMENTS** (751):

Meets the requirements

<sup>▲</sup>USP39

#### Change to read:

- **OTHER REQUIREMENTS:** It meets the requirements <sup>●</sup>for *Particulate and Foreign Matter and Container Contents* <sup>●</sup>(RB 1-Aug-2016) in *Ophthalmic Products—Quality Tests* (771), <sup>●</sup>*Drug Product Quality, Universal Tests, Particulate and Foreign Matter and Container Contents*. <sup>●</sup>(RB 1-Aug-2016)

<sup>▲</sup>USP39

## 2 Neomycin

### **ADDITIONAL REQUIREMENTS**

- **PACKAGING AND STORAGE:** Preserve in collapsible ophthalmic ointment tubes.
- **USP REFERENCE STANDARDS** <11>
  - USP Dexamethasone RS
  - USP Neomycin Sulfate RS
  - USP Polymyxin B Sulfate RS