MEDISCA® NETWORK INC.
TECHNICAL SUPPORT SERVICES
FORMULATION CHEMISTRY DEPARTMENT
TOLL-FREE: 866-333-7811
TELEPHONE: 514-905-5096
FAX: 514-905-5097
technicalservices@medisca.net

Suggested Formula	Azithromycin Dihydrate 105 mg/mL Intravenous Injection (Solution, 1000 mL)	FIN	F 005 067

SUGGESTED FORMULATION

Ingredient Listing	Qty.	Unit	NDC #	Supplier	Lot Number	Expiry Date
Azithromycin (Dihydrate), USP	105.000	g				
Citric Acid (Anhydrous), USP	82.72	g				
Benzyl Alcohol, NF	20.0	mL				
Sterile Water for Injection, USP	750.0	mL				
Sterile Water for Injection, USP	q.s. to 1000.0	mL				
Sodium Hydroxide 10% Solution	As required					

Note: Azithromycin Dihydrate 105 mg/mL is equivalent to Azithromycin 100 mg/mL.

SPECIAL PREPARATORY CONSIDERATIONS

Ingredient-Specific Information

Light sensitive *(protect from light whenever possible):* *Benzyl Alcohol*

Suggested Preparatory Guidelines

☐ Non-Sterile Preparation ■ Sterile Preparation

Processing Error / Testing Considerations: To account for processing error, sterility, pH and endotoxin testing considerations during preparation, it is suggested to measure an additional **1 to 3%** of the required quantities of ingredients.

Special Instruction: This formula must be prepared within the appropriate facilities under adequate environmental conditions, following the necessary guidelines and procedures as stated within *USP 797*. Only trained and qualified personnel must prepare this formula.

All heat stable, reusable materials and equipment must be sterilized and depyrogenated by dry heat sterilization at 250°C for 2 hours prior to use.

Every batch of final product compounded using this procedure must be sterility and endotoxin tested before being dispensed.

Protective apparel, such as a sterile gown, sterile gloves, shoe covers, head cap, eyewear and face-masks should always be worn. In addition, proper personnel cleansing must be done before entering the buffer or clean area.

Filter integrity must be validated by performing a filter stress test. If the test demonstrates that the filter might be defective, the solution must be discarded and remade.

This procedure requires the use of very small quantities of ingredients. All calculations and preparation techniques must be verified before dispensing the final product.

MEDISCA® NETWORK INC.
TECHNICAL SUPPORT SERVICES
FORMULATION CHEMISTRY DEPARTMENT
TOLL-FREE: 866-333-7811
TELEPHONE: 514-905-5096
FAX: 514-905-5097
technicalservices@medisca.net

Suggested Formula	Azithromycin Dihydrate 105 mg/mL Intravenous Injection (Solution, 1000 mL)	FIN	F 005 067

SUGGESTED PREPARATION (for 1000 mL)

Weigh and / or measure the following ingredients when appropriate:

Ingredient Listing	Qty.	Unit	Multiplication factor (*): ____	Processing Error	Qty. to measure
Azithromycin (Dihydrate), USP §	105.000	g			
Citric Acid (Anhydrous), USP §	82.72	g			
Benzyl Alcohol, NF §	20.0	mL			
Sterile Water for Injection, USP §	750.0	mL			
Sterile Water for Injection, USP §	q.s. to 1000.0	mL			
Sodium Hydroxide 10% Solution §	As required				

* Takes into account increased batch size conversions and density conversions, if required.
§ Weigh / measure just prior to use.

	Preparatory Instruction **IMPORTANT: All preparatory procedures must be performed using proper Aseptic Technique**
1.	**Equipment sterilization:** Following the manufacturer's specifications, sterilize and depyrogenate all heat stable, reusable materials and equipment, then return to ambient temperature.
2.	**Powder to medium integration:** A. In the given order, sequentially add the following ingredients to the Sterile Water For Injection (750.0 mL *plus* processing error adjustments): -Benzyl Alcohol -Citric Acid (Anhydrous) -Azithromycin (Dihydrate) Specifications: Continuously mix, using high-shear mixing techniques. End result: Homogeneous liquid-like dispersion. Note: Add the next ingredient, once the previous one has been completely added and dispersed.

MEDISCA® NETWORK INC.
TECHNICAL SUPPORT SERVICES
FORMULATION CHEMISTRY DEPARTMENT
TOLL-FREE: 866-333-7811
TELEPHONE: 514-905-5096
FAX: 514-905-5097
technicalservices@medisca.net

Suggested Formula	Azithromycin Dihydrate 105 mg/mL Intravenous Injection (Solution, 1000 mL)	FIN	F 005 067

3.	**pH testing:** A. Draw an appropriate amount of the mixture (Step 2A). B. Test the pH of the sample. It should lie between 6.4 and 6.6. C. If the pH < 6.4, carefully add, in a dropwise fashion, the Sodium Hydroxide 10% Solution to the mixture: 1. Draw and transfer 1 or 2 drops of the Sodium Hydroxide 10% Solution to the mixture. 2. Stir for at least 5 minutes to evenly disperse the Sodium Hydroxide 10% Solution. 3. Re-test the pH. 4. Continue to add the Sodium Hydroxide 10% Solution until the pH of 6.4 to 6.6 is obtained. IMPORTANT: Do not allow the pH to rise above 6.6. **End Result: Homogeneous liquid-like solution.**
4.	**Filling to volume:** A. Add additional Sterile Water for Injection to the above mixture to fill to the required batch size (1000.0 mL *plus* processing error adjustments). Specification: Continuously mix End result: Homogeneous liquid-like solution
5.	**Filtering and transferring:** Aseptically filter the solution through a 0.22-µm sterile filter into the recommended dispensing container (see Packaging requirements). Transfer the remainder into a separate dispensing container. This is to be used as the Test sample for sterility and endotoxin testing.
6.	**Filter integrity test:** Validate filter integrity by performing a filter stress test. If the test demonstrates that the filter might be defective, the solution must be discarded and remade.
7.	**Sterility testing:** Validate the Test sample for sterility and endotoxins, in accordance to current USP 797 regulatory guidelines.

MEDISCA® NETWORK INC.
TECHNICAL SUPPORT SERVICES
FORMULATION CHEMISTRY DEPARTMENT
TOLL-FREE: 866-333-7811
TELEPHONE: 514-905-5096
FAX: 514-905-5097
technicalservices@medisca.net

Suggested Formula	Azithromycin Dihydrate 105 mg/mL Intravenous Injection (Solution, 1000 mL)	FIN	F 005 067

SUGGESTED PRESENTATION

Estimated Beyond-Use Date		14 days, refrigerated as per USP 797. BUD based on a successful sterility and endotoxin test result.	Packaging Requirements		Sterile, tightly closed, light-resistant injection vials.
Auxiliary Labels	1	Use as directed. Do not exceed prescribed dose.		8	Do not use if discolored.
	2	Keep out of reach of children.		9	Discard container after use.
	3	Keep refrigerated. Do not freeze.		10	**For veterinary use only.**
	4	Discard in the presence of particulate matter.		11	Consult your health care practitioner if any prescription or over-the-counter medications are currently being used or are prescribed for future use.
	5	Protect from light.		12	Do not take with alcohol, sleep aids, tranquilizers or other CNS depressants.
	6	**Hypertonic solution, inject slowly.**		13	Equilibrate to room temperature before use.
	7	May impair mental and/or physical ability.			
Pharmacist Instructions	Add any auxiliary labels specific to the API to the dispensing container as deemed necessary. **IMPORTANT: Using proper aseptic techniques, one must dilute the compounded product to the appropriate concentrations with the appropriate sterile diluent prior to intravenous injection/infusion. Also it must be administered accordingly as determined by the prescribing veterinarian. It should not be given by other routes such as intramuscularly or by direct intravenous injection.** NOTE: Once diluted it must be used immediately and any unused portion must be discarded.				
Patient Instructions	Contact your pharmacist in the event of adverse reactions.				

MEDISCA® NETWORK INC.
TECHNICAL SUPPORT SERVICES
FORMULATION CHEMISTRY DEPARTMENT
TOLL-FREE: 866-333-7811
TELEPHONE: 514-905-5096
FAX: 514-905-5097
technicalservices@medisca.net

Suggested Formula	Azithromycin Dihydrate 105 mg/mL Intravenous Injection (Solution, 1000 mL)	FIN	F 005 067

REFERENCES

1. Parenteral Preparations. In: Allen, LV, Jr. *The Art, Science and Technology of Pharmaceutical Compounding Third Edition.* American Pharmaceutical Association; 2008: 313.
2. Zithromax. In: Canadian Pharmacists Association. *Compendium of Pharmacists and Specialties, 2012*: 3079.
3. Benzyl Alcohol. In: Rowe RC. *Handbook of Pharmaceutical Excipients, 6th Edition*. American Pharmaceutical Association; 2009: 64.
4. Citric Acid Monohydrate. In: Rowe RC. *Handbook of Pharmaceutical Excipients, 6th Edition*. American Pharmaceutical Association; 2009: 181.
5. Azithromycin. In: Sweetman SC, ed. *Martindale: The Complete Drug Reference, 36th Edition.* London, England: The Pharmaceutical Press; 2009: 207.
6. Azithromycin (Monograph). In: O'Neil MJ. *The Merck Index 14th Edition*. Whitehouse Station, NJ: Merck & Co, Inc.; 2006: Monograph #915.
7. Chapter 8: Buffered and Isotonic Solutions. In: Martin, A. *Physical Pharmacy, Fourth Edition.* Philadelphia, PA: Lipponcott Williams & Wilkins; 1993: 169~189.
8. Chapter 18: Tonicity, Osmoticity, Osmolaltiy and Osmolarity. In: Gennaro AR. *Remington: The Science and Practice of Pharmacy, 20th Edition.* Baltimore, MD: Lippincott Williams & Wilkins; 2000: 246~262.
9. Azithromycin (Monograph). *United States Pharmacopeia XXXV / National Formulary 30.* Rockville, MD. US Pharmacopeial Convention, Inc. 2012: 2279.
10. Azithromycin Systemic. Thomson Micromedex. *USP DI – Drug Information for the Health Care Professional, 26th Edition.* Taunton, MA: US Pharmacopeial Convention, Inc; 2006: 505.
11. USP <797>. *United States Pharmacopeia XXXV / National Formulary 30.* Rockville, MD. US Pharmacopeial Convention, Inc. 2012: 350.