



Suggested Formula	Morphine Sulfate 1 mg/mL Intravenous Injection (Solution, 55 mL)	FIN	F 003 778
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## SUGGESTED FORMULATION

Ingredient Listing	Qty.	Unit	NDC #	Supplier	Lot Number	Expiry Date
Morphine Sulfate 10 mg/mL Injection, USP (Sterile)	5.50	mL				
Sodium Chloride 0.9% for Injection, USP (sterile)	49.5	mL				

## SPECIAL PREPARATORY CONSIDERATIONS

### Ingredient-Specific Information

**Controlled substance** (adhere to proper handling and documentation procedures)

Morphine Sulfate

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

Morphine Sulfate

### Suggested Preparatory Guidelines

Non-Sterile Preparation     Sterile Preparation

Processing Error / Testing Considerations: To account for processing error, sterility and endotoxin testing considerations during preparation, it is suggested to measure an additional **5 to 9%** 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.



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### SUGGESTED PREPARATION (for 55 mL)

Weigh and / or measure the following ingredients when appropriate:

Ingredient Listing	Qty.	Unit	Multiplication factor (*): ____	Processing Error	Qty. to measure
Morphine Sulfate 10 mg/mL Injection, USP (Sterile) §	5.50	mL			
Sodium Chloride 0.9% for Injection, USP (sterile) §	49.5	mL			

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

<u>Preparatory Instruction</u>	
<b>IMPORTANT: All preparatory procedures must be performed using proper Aseptic Technique</b>	
1.	<b><u>Equipment sterilization:</u></b> Following the manufacturer's specifications, sterilize and depyrogenate all heat stable, reusable materials and equipment, then return to ambient temperature.
2.	<b><u>Medium integration:</u></b> <b>Note:</b> All manipulations must be done under a laminar airflow hood. Disinfect the commercial vials with Alcohol 70% prior to withdrawing the required amount of liquid.  A. Incrementally add the Morphine Sulfate 10 mg/mL Injection (sterile) to the Sodium Chloride 0.9% for Injection (sterile).  <b>Specifications:</b> Continuously mix.  <b>End result:</b> Homogeneous liquid-like solution.
3.	<b><u>Filtering and transferring:</u></b> 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.
4.	<b><u>Sterility testing:</u></b> Validate the Test sample for sterility and endotoxins, in accordance to current USP 797 regulatory guidelines.



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### SUGGESTED PRESENTATION

Estimated Beyond-Use Date	14 days, refrigerated. BUD based on a successful sterility and endotoxin test result.	Packaging Requirements	Sterile, tight, light-resistant unit dose vials.
Auxiliary Labels	1 Use as directed. Do not exceed prescribed dose.	8	Do not used if product changes color.
	2 Keep out of reach of children.	9	Protect from light.
	3 Keep refrigerated. Do not freeze.	10	Equilibrate to room temperature before use.
	4 Do not take with alcohol, sleep aids, tranquilizers or other CNS depressants.	11	May produce psychological and/or physical dependence.
	5 May impair mental and/or physical ability. Use care when operating a car or machinery.	12	Controlled substance. Dangerous unless used as directed.
	6 Consult your health care practitioner if any other prescription or over-the-counter medications are currently being used or are prescribed for future use.	13	Discard in the presence of particulate matter.
	7 For medical office use only.	14	Discard container after use.
Pharmacist Instructions	Add any auxiliary labels specific to the active ingredients to the dispensing container as deemed necessary. <b>IMPORTANT: TO BE ADMINISTERED ONLY BY THE PRESCRIBING PHYSICIAN.</b>		
Patient Instructions	Contact your pharmacist in the event of adverse reactions.		



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## REFERENCES

1.	USP <797>. <i>United States Pharmacopeia XXXII / National Formulary 27</i> . Rockville, MD. US Pharmacopeial Convention, Inc. 2009: 318.
2.	Parenteral Preparations. In: Allen, LV, Jr. <i>The Art, Science and Technology of Pharmaceutical Compounding Third Edition</i> . American Pharmaceutical Association; 2008: 313.
3.	Morphine (Monograph). In: O'Neil MJ. <i>The Merck Index 14<sup>th</sup> Edition</i> . Whitehouse Station, NJ: Merck & Co, Inc.; 2006: Monograph #6276.
4.	Morphine Sulfate. In: Trissel LA. <i>Trissel's Stability of Compounded Formulations, 3<sup>rd</sup> Edition</i> . American Pharmaceutical Association; 2005: 298.
5.	Morphine Sulfate. Thomson Micromedex. <i>USP DI – Drug Information for the Health Care Professional, 26<sup>th</sup> Edition</i> . Taunton, MA: US Pharmacopeial Convention, Inc; 2006: 2276.
6.	Morphine Sulfate (Monograph). <i>United States Pharmacopeia XXXII / National Formulary 27</i> . Rockville, MD. US Pharmacopeial Convention, Inc. 2009: 3007.

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