

The background is a light blue gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The text is centered on the right side of the image.

# RECONSTITUTION OF SOLUTIONS

CALHOUN COMMUNITY COLLEGE

# RECONSTITUTION

- A DRUG IN POWDERED FORM IS NECESSARY WHEN A MEDICATION IS UNSTABLE AS A LIQUID FORM FOR A LONG PERIOD.
- THIS POWDERED DRUG MUST BE RECONSTITUTED OR *DISSOLVED WITH A STERILE DILUENT* BEFORE ADMINISTRATION.

# RECONSTITUTION

- THE PROCESS OF ADDING A **SOLVENT** OR **DILUENT** TO A MEDICATION IN POWDERED FORM TO DISSOLVE IT AND FORM A SOLUTION

*EX: CRYSTAL LIGHT*

- RECONSTITUTION IS PERFORMED MOSTLY IN THE PHARMACY EXCEPT THOSE MEDICATIONS NEEDED TO BE RECONSTITUTED IMMEDIATELY BEFORE ADMINISTRATION
- **SOLUTE** – A POWDER OR LIQUID CONCENTRATE TO BE DISSOLVED OR DILUTED
- **SOLVENT (DILUENT)** – A LIQUID THAT IS ADDED TO THE POWDER OR LIQUID CONCENTRATE
- **SOLUTION** – THE LIQUID THAT RESULTS WHEN THE SOLVENT DISSOLVES THE SOLUTE

# PRINCIPLES OF RECONSTITUTION

- YOU MUST FOLLOW THE MANUFACTURERS DIRECTION FOR RECONSTITUTION. THEY WILL PROVIDE:
  1. THE EXPIRATION DATE
  2. TYPE OF DILUENT/SOLVENT TO USE (*STERILE WATER, STERILE NORMAL SALINE, 5% DEXTROSE & BACTERIOSTATIC WATER – SOME POWDERED MEDS FOR ORAL USE MAY EVEN BE RECONSTITUTED WITH TAP WATER*): **NEVER ASSUME THE TYPE OR AMOUNT OF DILUENT TO BE USED...**
  3. AMOUNT (ML) OF DILUENT/SOLVENT TO BE USE
  4. LENGTH OF TIME MEDICATION IS GOOD ONCE MIXED (*SEVERAL HOURS TO SEVERAL DAYS ~ SOME UP TO 14 DAYS*)
  5. WHERE TO STORE ONCE MIXED (SHELF, REFRIGERATOR, ETC)

# PRINCIPLES OF RECONSTITUTION (CON'T)

- IF NO DIRECTIONS ARE PROVIDED, USE THE PDR, YOUR POCKET DRUG GUIDE, OR CALL THE PHARMACY FOR GUIDANCE (FOLLOW FACILITY WHERE YOU ARE WORKING POLICY)
- IF A MULTI-DOSE VIAL, ONCE MIXED, YOU MUST LABEL THE MEDICATION WITH YOUR INITIALS, DATE AND TIME MIXED, EXPIRATION DATE, ALONG WITH THE FINAL CONCENTRATION AFTER MIXTURE
- *RECOGNIZE THAT AFTER THE DILUENTS IS ADDED TO THE POWDER, THERE MAY BE ADDITIONAL (DISPLACED) VOLUME TO THE SOLUTION*
  - **EX:** ADD 0.5 ML TO 2 G OF POWDERED MEDICATION TO PROVIDE APPROXIMATE VOLUME OF 1 ML (2 G/1 ML)

# DIFFERENT IV AND IM RECONSTITUTION INSTRUCTIONS

## For I.M. or I.V. Use

CAUTION: Addition of diluent generates pressure within the vial. Vent slowly.

For I.V. solution—Dilute with at least 5 mL Sterile Water for Injection or other approved diluent. SHAKE WELL TO DISSOLVE. See literature.

For I.M. solution—Add 1.5 mL of an approved diluent. SHAKE WELL TO DISSOLVE.

Provides an approximate volume of 1.8 mL (280 mg per mL). For dosage and administration see literature.

**Prior to Reconstitution:** Protect from Light; Store at 59° to 86°F.

**After Reconstitution:** Store in a refrigerator and use within 7 days. If kept at room temperature, use within 24 hours. Once reconstituted, light protection is not needed.

Each vial contains: 500 mg of Ceftazidime and 59 mg of Sodium Carbonate. Sodium content: approximately 27 mg (1.2 mEq) of sodium per vial.

WV 4622 AMX

Eli Lilly & Co., Indianapolis, IN 46285, U.S.A.  
Exp. Date/Control No.

NDC 0002-7230-01  
VIAL No. 7230



**TAZIDIME<sup>®</sup>**  
**CEFTAZIDIME FOR**  
**INJECTION, USP**

Equivalent to

**500 mg**

Ceftazidime Activity

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**TAZIDIME<sup>®</sup>**  
**CEFTAZIDIME FOR**  
**INJECTION, USP**

Equivalent to

**500 mg**

Ceftazidime Activity



## THINK TIME



1. WHAT IS THE TOTAL DOSAGE STRENGTH OF TAZIDIME IN THE VIAL? \_\_\_\_\_
2. HOW MUCH DILUENT IS ADDED TO THE VIAL TO PREPARE THE MEDICATION FOR IM USE? \_\_\_\_\_
3. WHAT DILUENT IS RECOMMENDED FOR RECONSTITUTION FOR IM ADMINISTRATION? \_\_\_\_\_
4. WHAT IS THE FINAL CONCENTRATION OF THE SOLUTION PREPARED FOR IM ADMINISTRATION? \_\_\_\_\_
5. HOW LONG DOES THE MEDICATION RETAIN ITS POTENCY AT ROOM TEMPERATURE? \_\_\_\_\_ IF REFRIGERATED? \_\_\_\_\_
6. 400 MG IM Q 8 HRS IS ORDERED. HOW MANY ML WILL YOU GIVE?  
\_\_\_\_\_



# THINK TIME ANSWERS

1. WHAT IS THE TOTAL DOSAGE STRENGTH OF TAZIDIME IN THE VIAL? 500 MG
2. HOW MUCH DILUENT IS ADDED TO THE VIAL TO PREPARE THE MEDICATION FOR IM USE? 1.5 ML
3. WHAT DILUENT IS RECOMMENDED FOR RECONSTITUTION FOR IM ADMINISTRATION? APPROVED DILUENT
4. WHAT IS THE FINAL CONCENTRATION OF THE SOLUTION PREPARED FOR IM ADMINISTRATION? 280 MG/ML
5. HOW LONG DOES THE MEDICATION RETAIN ITS POTENCY AT ROOM TEMPERATURE? 24 HOURS IF REFRIGERATED? 7 DAYS
6. 400 MG IM Q 8 HRS IS ORDERED. HOW MANY ML WILL YOU GIVE?  
400 MG X 1 ML = 1.42 ML = 1.4 ML  
280 MG

Rx only

See package insert for complete product information. Store at controlled room temperature 20° to 25°C (68° to 77°F) [see USP]. Protect from light. Reconstitute with 8 mL Bacteriostatic Water for Injection with Benzyl Alcohol. **When reconstituted as directed each 8 mL contains:**

\*Methylprednisolone sodium succinate equivalent to 500 mg methylprednisolone (62.5 mg per mL). Store solution at controlled room temperature 20° to 25°C (68° to 77°F) [see USP] and use within 48 hours after mixing. Lyophilized in container. Protect from light.

Reconstituted: \_\_\_\_\_

Pharmacia & Upjohn Co., Kalamazoo, MI 49001, USA

NDC 0009-0758-01  
4—125 mg doses

# Solu-Medrol®

methylprednisolone  
sodium succinate for  
injection, USP

## 500 mg\*

For intramuscular or intravenous use  
Diluent Contains Benzyl Alcohol  
as a Preservative

- **ORDER:** SOLU-MEDROL 200 MG IV Q 6 H

# RECONSTITUTION DRUG ORDER

- **FIRST**, TO FILL THE ORDER, HOW MUCH AND WHAT TYPE OF DILUENT MUST YOU ADD? \_\_\_\_\_
- **SECOND**, WHAT IS THE SUPPLY DOSAGE OF THE RECONSTITUTED SOLU-MEDROL? WHEN ADDING 8 ML OF DILUENT, THE SUPPLY DOSAGE IS \_\_\_\_\_ MG/ML
- **THIRD**, WHAT IS THE RESULTING TOTAL VOLUME OF THIS RECONSTITUTED SOLUTION? THE TOTAL VOLUME IS \_\_\_\_\_. (YOU KNOW THIS BECAUSE  $62.5 \text{ MG/ML} \times \text{_____} = 500 \text{ MG}$ ).
- FINALLY, HOW MANY FULL DOSES OF SOLU-MEDROL ARE AVAILABLE IN THIS VIAL? THE VIAL CONTAINS 500 MG AND THE ORDER IS FOR 200 MG. THERE ARE \_\_\_\_\_ FULL DOSES IN THE VIAL. A RECONSTITUTION LABEL IS NEEDED.

# RECONSTITUTION DRUG ORDER ANSWERS

- **FIRST**, TO FILL THE ORDER, HOW MUCH AND WHAT TYPE OF DILUENT MUST YOU ADD? 8 ML OF BACTERIOSTATIC WATER
- **SECOND**, WHAT IS THE SUPPLY DOSAGE OF THE RECONSTITUTED SOLU-MEDROL? WHEN ADDING 8 ML OF DILUENT, THE SUPPLY DOSAGE IS 62.5 MG/ML
- **THIRD**, WHAT IS THE RESULTING TOTAL VOLUME OF THIS RECONSTITUTED SOLUTION? THE TOTAL VOLUME IS 8 ML (YOU KNOW THIS BECAUSE  $62.5 \text{ MG/ML} \times \text{8 ML} = 500 \text{ MG}$ ).
- FINALLY, HOW MANY FULL DOSES OF SOLU-MEDROL ARE AVAILABLE IN THIS VIAL? THE VIAL CONTAINS 500 MG AND THE ORDER IS FOR 200 MG. THERE ARE 2 FULL DOSES IN THE VIAL. A RECONSTITUTION LABEL IS NEEDED.

# RECONSTITUTION DOSAGE CALCULATION

- CALCULATE ONE DOSE.
  - **STEP 1. CONVERT** - NO CONVERSION IS NECESSARY
    - ORDER: SOLU-MEDROL 200 MG IV Q.6H
    - SUPPLY: 62.5 MG/ML
  - **STEP 2. THINK**
    - YOU WANT TO GIVE MORE THAN 1 ML.

- **STEP 3. CALCULATE**

$$\frac{D}{H} \times Q = \frac{200 \text{ mg}}{62.5 \text{ mg}} \times 1 \text{ mL} = 3.2 \text{ mL} \text{ given IV q 6 h}$$

# MORE SAMPLES

200 ml.  
after mixing

NDC 0003-0681-54

125 mg. (200,000 units)

per 5 ml. when mixed as directed

**VEETIDS® '125'**  
**Penicillin V Potassium**  
**for Oral Solution U.S.P.**  
**for ORAL SOLUTION**

Bottle contains penicillin V potassium equivalent to 5 grams penicillin V in a dry, pleasantly flavored, buffered mixture.

When prepared as directed each 5 ml. teaspoonful provides penicillin V potassium equivalent to 125 mg. (200,000 units) penicillin V.

#### DIRECTIONS FOR PREPARATION

Use 117 ml. of water to prepare 200 ml. oral solution: (1) Loosen powder. (2) Add measured water and shake vigorously.

Usual dosage: Adults and children — 1 to 2 teaspoonfuls 3 or 4 times daily. Infants — 15 to 56 mg./kg. daily in 3 to 6 divided doses.

See insert for detailed information

Store at room temperature in dry form

E. R. Squibb & Sons, Inc.  
Princeton, N.J. 08540

Made in U.S.A.

M7823A

**First**, to fill the order, how much and what type of diluent must you add?

---

---

**Second**, what is the supply dosage of the reconstituted PCN V?

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**Third**, what is the resulting total volume of this reconstituted solution? The total volume is \_\_\_\_\_

# MORE SAMPLES ANSWERS

200 ml.  
after mixing

NDC 0003-0681-54

125 mg. (200,000 units)

per 5 ml. when mixed as directed

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See insert for detailed information

Store at room temperature in dry form

E. R. Squibb & Sons, Inc.  
Princeton, N.J. 08540

Made in U.S.A.

M7823A

**First**, to fill the order, how much and what type of diluent must you add?

117 ml of water

**Second**, what is the supply dosage of the reconstituted PCN V? 125 mg/5mL

**Third**, what is the resulting total volume of this reconstituted solution? The total volume is 200 mL

Store at or below 86°F (30°C).

**DOSAGE AND USE**

See accompanying prescribing information.

Constitute to 100 mg/mL\* with 4.8 mL of Sterile Water For Injection.

**Must be further diluted before use.**

For appropriate diluents and storage recommendations, refer to prescribing information.

\*Each mL contains azithromycin dihydrate equivalent to 100 mg of azithromycin, 76.9 mg of citric acid, and sodium hydroxide for pH adjustment.

05-5191-32-0

**CAUTION:** Federal law prohibits dispensing without prescription.

NDC 0069-3150-83

**Zithromax®**  
(azithromycin for injection)

*For IV infusion only*

**STERILE**  
equivalent to

**500 mg**

of azithromycin

*Distributed by*



**Pfizer Labs**

Division of Pfizer Inc, NY, NY 10017

1. What is the total strength of Zithromax in this vial? \_\_\_\_\_
2. How much diluent is added to the vial to prepare the drug for use? \_\_\_\_\_
3. What diluent is recommended for reconstitution? \_\_\_\_\_
4. What is the final concentration of the prepared solution for administration?  
\_\_\_\_\_



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**DOSAGE AND USE**

See accompanying prescribing information.

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*For IV infusion only*

**STERILE**

equivalent to

**500 mg**

of azithromycin

*Distributed by*



**Pfizer Labs**

Division of Pfizer Inc, NY, NY 10017

## ANSWERS

1. What is the total strength of Zithromax in this vial? 500 mg
2. How much diluent is added to the vial to prepare the drug for use? 4.8 mL
3. What diluent is recommended for reconstitution? Sterile Water
4. What is the final concentration of the prepared solution for administration?  
100 mg/mL

NDC 0002-1497-01  
VIAL No. 767



**KEFZOL®**

**STERILE  
CEFAZOLIN  
SODIUM, USP**

Equiv. to

**500 mg**

Cefazolin

**CAUTION—Federal (U.S.A.) law prohibits dispensing without prescription.**

For I.M. or I.V. Use

**Dosage—See literature.**

To prepare solution add 2 mL Sterile Water for Injection or 0.9% Sodium Chloride Injection. Provides an approximate volume of 2.2 mL (225 mg per mL)

**SHAKE WELL**

Protect from Light

**Prior to Reconstitution:** Store at Controlled Room Temperature 59° to 86°F (15° to 30°C)

**After Reconstitution:** Store in a refrigerator. For Storage Time - See Accompanying Literature. If kept at room temperature, use within 24 hours.

Lyophilized

WV 4520 AMX

Eli Lilly & Co., Indianapolis, IN 46285, U.S.A.

Exp. Date/Control No.

1. What is the total strength of Kefzol in this vial? \_\_\_\_\_
2. How much diluent is added to the vial to prepare the drug for use? \_\_\_\_\_
3. What diluent is recommended for reconstitution? \_\_\_\_\_
4. What is the final concentration of the prepared solution for administration?  
\_\_\_\_\_
5. How long with the reconstituted material retain its potency at room temperature? \_\_\_\_\_

NDC 0002-1497-01  
VIAL No. 767



**KEFZOL®**

**STERILE  
CEFAZOLIN  
SODIUM, USP**

Equiv. to

**500 mg**

Cefazolin

**CAUTION**—Federal (U.S.A.) law prohibits dispensing without prescription.

For I.M. or I.V. Use

**Dosage**—See literature.

To prepare solution add 2 mL Sterile Water for Injection or 0.9% Sodium Chloride Injection. Provides an approximate volume of 2.2 mL (225 mg per mL)

**SHAKE WELL**

Protect from Light

**Prior to Reconstitution:** Store at Controlled Room Temperature 59° to 86°F (15° to 30°C)

**After Reconstitution:** Store in a refrigerator. For Storage Time - See Accompanying Literature. If kept at room temperature, use within 24 hours.

Lyophilized

WV 4520 AMX

Eli Lilly & Co., Indianapolis, IN 46285, U.S.A.

Exp. Date/Control No.

## ANSWERS

1. What is the total strength of Kefzol in this vial? 500 mg
2. How much diluent is added to the vial to prepare the drug for use? 2 mL
3. What diluent is recommended for reconstitution? Sterile Water
4. What is the final concentration of the prepared solution for administration?  
225 mg/mL
5. How long with the reconstituted material retain its potency at room temperature? 24 hours

# RECONSTITUTION OF NON-INJECTABLE SOLUTIONS

- ENTERAL FEEDINGS – NUTRITION ADMINISTERED VIA THE GASTROINTESTINAL TRACT (NG TUBE, J TUBE OR G TUBE) MAY BE FULL STRENGTH OR DILUTED.



# CONTINUOUS FULL STRENGTH FEEDING ORDERS

- ORDER: NEPRO 400 ML **TO INFUSE OVER** 8 HRS FOLLOWED BY 100 ML WATER AFTER EACH FEED. DETERMINE THE RATE IN ML PER HOUR.

➤ 
$$\frac{400 \text{ ML}}{8 \text{ HR}} = \underline{\hspace{2cm}} \text{ ML/HR}$$

- ORDER: ENSURE 1 200 ML **TO INFUSE OVER** 24 HRS FOLLOWED BY 250 ML WATER AFTER EACH FEED. DETERMINE THE RATE IN ML PER HOUR.

➤ 
$$\frac{1200 \text{ ML}}{24 \text{ HR}} = \underline{\hspace{2cm}} \text{ ML/HR}$$

# CALCULATING SOLUTIONS

- **STEP ONE:** PREPARE SOLUTIONS OF SPECIFIC STRENGTH, DETERMINE AMOUNT OF **SOLUTE:**
- **D** X **Q** = **X**

**D** (DESIRED SOLUTION STRENGTH)

**Q** (QUANTITY OF DESIRED SOLUTION)

**X** (AMOUNT OF SOLUTE)

**ORDER: 1/3 STRENGTH ENSURE 900 ML VIA NG TUBE OVER 8 HRS**

$$1/3 \quad X \quad 900 \text{ ML} \quad = \quad \text{AMOUNT OF SOLUTE}$$

$$900/3 \quad = \quad 300 \text{ ML}$$

***YOU NEED 300 ML OF THE SOLUTE (ENSURE)***

# CALCULATING SOLUTIONS

- **STEP TWO:** DETERMINE AMOUNT OF **SOLVENT** NEEDED:

- $Q - S = X$

Q (QUANTITY OF DESIRED SOLUTION )

(S) AMOUNT OF LIQUID SOLUTE

S (AMOUNT OF SOLVENT)

ORDER: 1/3 STRENGTH ENSURE 900 ML VIA NG TUBE OVER 8 HRS

$$Q (900 \text{ ML}) - S (300 \text{ ML}) = S (600 \text{ ML})$$

*THEREFORE, YOU WOULD ADD 600 ML OF WATER TO 300 ML OF ENSURE TO MAKE 900 ML OF 1/3 STRENGTH ENSURE.*

## SOLUTION CALCULATION (EXAMPLE)

- ORDER:  $\frac{1}{4}$  STRENGTH ISOMIL 12 OZ VIA NASOGASTRIC TUBE OVER 6 HOURS.
- CONVERT OZ TO ML : \_\_\_\_\_ ML
- AMOUNT OF SOLUTE (ISOMIL): \_\_\_\_\_ ML
- AMOUNT OF SOLVENT (WATER): \_\_\_\_\_ ML
- HOW MANY ML /HR WILL YOU ADMINISTER THE ISOMIL?
  - (12 OZ) \_\_\_\_\_ ML DIVIDED BY 6 = \_\_\_\_\_ ML PER HOUR



## SOLUTION CALCULATION ANSWER

- ORDER:  $\frac{1}{4}$  STRENGTH ISOMIL 12 OZ VIA NASOGASTRIC TUBE OVER 6 HOURS.
- CONVERT OZ TO ML :  $12 \times 30 \text{ ML} = 360 \text{ ML}$
- AMOUNT OF SOLUTE (ISOMIL):  $\frac{1}{4}$  OF 360 = 90 ML
- AMOUNT OF SOLVENT (WATER):  $360 - 90 = 270 \text{ ML}$
- HOW MANY ML /HR WILL YOU ADMINISTER THE ISOMIL?
  - (12 OZ) 360 ML DIVIDED BY 6 = 60 ML PER HOUR

## SOLUTION CALCULATION (EXAMPLE)

- ORDER: 2/3 STRENGTH ENSURE 6 OZ P.O. Q 4 H FOR 24 HRS.
- CONVERT OZ TO ML: \_\_\_\_\_ ML
- THE ORDER READS ADMINISTER 2/3 STRENGTH ENSURE 6 OZ EVERY 4 HOURS FOR 24 HOURS ( $24 \div 4 = 6$  TIMES YOU WILL ADMINISTER 6 OZ)
  - WHAT IS THE TOTAL ML YOU WILL ADMINISTER IN 24 HOURS? \_\_\_\_\_
- AMOUNT OF SOLUTE (ENSURE): \_\_\_\_\_ ML
- AMOUNT OF SOLVENT (WATER): \_\_\_\_\_ ML

# SOLUTION CALCULATION ANSWER

- ORDER: 2/3 STRENGTH ENSURE 6 OZ P.O. Q 4 H FOR 24 HRS.
- CONVERT OZ TO ML: 6 X 30 ML = 180 ML
- THE ORDER READS ADMINISTER 2/3 STRENGTH ENSURE 6 OZ EVERY 4 HOURS FOR 24 HOURS (24 ÷ 4 = 6 TIMES YOU WILL ADMINISTER 6 OZ)
  - WHAT IS THE TOTAL ML YOU WILL ADMINISTER IN 24 HOURS? 180 ML X 6 (HOURS) = 1080 ML
- AMOUNT OF SOLUTE (ENSURE): 2/3 OF 180 = 120 ML
- AMOUNT OF SOLVENT (WATER): 180 - 120 = 60 ML

- THE PHYSICIAN ORDERS AMPICILLIN 500 MG IM EVERY 6 HOURS FOR A PATIENT WITH PNEUMONIA.
- HOW MUCH DILUENT WILL BE ADDED TO THE BOTTLE? \_\_\_\_\_
- WHAT IS THE CONCENTRATION AFTER RECONSTITUTION? \_\_\_\_\_
- HOW MANY MILLILITERS WILL THE NURSE ADMINISTER? \_\_\_\_\_

<p>NDC 0015-7404-20 NSN 6505-00-993-3518</p> <p>EQUIVALENT TO <b>1 gram AMPICILLIN</b></p> <p><b>Ampicillin</b> <b>for Injection, USP</b></p> <p>Formerly known as <b>Sterile Ampicillin Sodium, USP</b></p> <p>For IM or IV Use</p> <p><b>Rx only</b></p>	<p>For IM use, add 3.5 mL diluent (read accompanying insert). Resulting solution contains 250 mg ampicillin per mL.</p> <p><b>Use solution within 1 hour.</b></p> <p>This vial contains ampicillin sodium equivalent to 1 gram ampicillin.</p> <p>Usual Dosage: Adults—250 to 500 mg IM q. 6h.</p> <p><b>READ ACCOMPANYING INSERT</b> for detailed indications, IM or IV dosage and precautions.</p> <p><b>APOTHECON®</b></p> <p>A Bristol-Myers Squibb Company      740420DRL-3 Princeton, NJ 08540 USA                      34-001448-01</p>
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## ANSWERS

- THE PHYSICIAN ORDERS AMPICILLIN 500 MG IM EVERY 6 HOURS FOR A PATIENT WITH PNEUMONIA.
- HOW MUCH DILUENT WILL BE ADDED TO THE BOTTLE? 3.5 ML
- WHAT IS THE CONCENTRATION AFTER RECONSTITUTION? 250MG/ML
- HOW MANY MILLILITERS WILL THE NURSE ADMINISTER? 500 MG X 1 ML = 2 ML  
250 MG

<p>NDC 0015-7404-20 NSN 6505-00-993-3518</p> <p>EQUIVALENT TO <b>1 gram AMPICILLIN</b></p> <p><b>Ampicillin</b> <b>for Injection, USP</b></p> <p>Formerly known as <b>Sterile Ampicillin Sodium, USP</b></p> <p>For IM or IV Use</p> <p><b>Rx only</b></p>	<p>For IM use, add 3.5 mL diluent (read accompanying insert). Resulting solution contains 250 mg ampicillin per mL.</p> <p><b>Use solution within 1 hour.</b></p> <p>This vial contains ampicillin sodium equivalent to 1 gram ampicillin.</p> <p>Usual Dosage: Adults—250 to 500 mg IM q. 6h.</p> <p><b>READ ACCOMPANYING INSERT</b> for detailed indications, IM or IV dosage and precautions.</p> <p><b>APOTHECON®</b></p> <p>A Bristol-Myers Squibb Company      740420DRL-3 Princeton, NJ 08540 USA                      34-001448-01</p>
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## ANSWERS

- THE PHYSICIAN ORDERS ANCEF 500 MG IM EVERY 12 HOURS FOR A PATIENT WITH CELLULITIS.
- HOW MUCH DILUENT WILL BE ADDED TO THE BOTTLE? 2.5 ML
- WHAT IS THE CONCENTRATION AFTER RECONSTITUTION? 330 MG/ML
- HOW MANY MILLILITERS WILL THE NURSE ADMINISTER?

$$\underline{500 \text{ MG}} \times 1 \text{ ML} = 1.51 = 1.5 \text{ ML}$$

330 MG

EXP. LOT

equivalent to  
**1 gram** cefazolin  
NDC 0007-3130-16

**ANCEF<sup>®</sup>**  
**STERILE CEFAZOLIN  
SODIUM (LYOPHILIZED)**

25 Vials for Intramuscular  
or Intravenous Use


NSN 6505-01-262-9508  
Before reconstitution protect from light and store at controlled room temperature (15° to 30°C; 59° to 86°F).  
**Usual Adult Dosage:** 250 mg to 1 gram every 6 to 8 hours. See accompanying prescribing information.  
For I.M. administration add 2.5 mL of Sterile Water for Injection. SHAKE WELL. Withdraw entire contents. Provides an approximate volume of 3.0 mL (330 mg/mL). For I.V. administration see accompanying prescribing information.  
Reconstituted *Ancef* is stable for 24 hours at room temperature or for 10 days if refrigerated (5°C or 41°F).  
SmithKline Beecham Pharmaceuticals  
Philadelphia, PA 19101

694115-N

**K3130-16**



- VANCOGIN 1000 MG ORAL EVERY 6 HOURS HAS BEEN ORDERED FOR A PATIENT WITH COLITIS.
- HOW MUCH DILUENT WILL BE ADDED TO THE BOTTLE? \_\_\_\_\_
- WHAT IS THE CONCENTRATION AFTER RECONSTITUTION? \_\_\_\_\_
- HOW MANY MILLILITERS WILL THE NURSE ADMINISTER? \_\_\_\_\_

<p>NDC 0002-5105-01      M-5105</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="background-color: #0070C0; color: white; padding: 5px; border-radius: 5px;">Rx</div> <div style="font-family: cursive; color: red; font-size: 1.2em;">Lilly</div> </div> <p><b>VANCOGIN<sup>®</sup> HCl</b>  vancomycin  hydrochloride for oral  solution, USP</p> <p>Equivalent to  <span style="font-size: 1.5em; color: red;"><b>1 g</b></span>  Vancomycin</p> <p style="color: red; font-weight: bold;">FOR ORAL USE ONLY</p> <div style="text-align: right; margin-top: 20px;">   0002-5105-01  9  Zs </div>	<p><b>CAUTION</b>—Federal (USA) law prohibits dispensing without prescription.</p> <p><b>Usual Dose</b>—See literature.</p> <p>Not For Treatment Of Systemic Infections. Contains Vancomycin Hydrochloride Equivalent to 1 g Vancomycin.</p> <p><b>Keep Tightly Closed</b></p> <p><b>Prior to Reconstitution:</b> Store at Controlled Room Temperature 59° to 86°F (15° to 30°C)</p> <p><b>After Reconstitution:</b> The solution should be refrigerated and used within two weeks. Mix the contents of this vial with distilled or deionized water (20 mL). Mix thoroughly to dissolve.</p> <p>When reconstituted with 20 mL, each 5 mL contains approximately 250 mg of Vancomycin.</p> <p>Eli Lilly and Company  Indianapolis, IN 46285, USA</p> <div style="text-align: center;"> <span style="color: red; font-size: 1.2em;">●</span> <span style="font-weight: bold; font-size: 1.2em;">WW 0742 AMX</span> <span style="color: red; font-size: 1.2em;">●</span> </div> <p>Exp. Date/Control No.</p>
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## ANSWERS

- VANCOGIN 1000 MG ORAL EVERY 6 HOURS HAS BEEN ORDERED FOR A PATIENT WITH COLITIS.
- HOW MUCH DILUENT WILL BE ADDED TO THE BOTTLE? 20 ML
- WHAT IS THE CONCENTRATION AFTER RECONSTITUTION? 250 MG/5ML
- HOW MANY MILLILITERS WILL THE NURSE ADMINISTER?

$$\frac{1000 \text{ MG}}{250 \text{ MG}} \times 5 \text{ ML} = 20 \text{ ML}$$



The image shows a vial label for Vancocin HCl. The label is divided into two main sections. The left section contains product information: NDC 0002-5105-01, M-5105, the Lilly logo, and the text 'VANCOGIN® HCl vancomycin hydrochloride for oral solution, USP Equivalent to 1g Vancomycin FOR ORAL USE ONLY'. A barcode is located on the right side of this section. The right section contains a 'CAUTION' statement, 'Usual Dose' information, and reconstitution instructions. At the bottom of the right section, it says 'Eli Lilly and Company Indianapolis, IN 46285, USA' and 'WW 0742 AMX' with two red dots on either side, followed by 'Exp. Date/Control No.'.

NDC 0002-5105-01 M-5105

**Rx** Lilly

**VANCOGIN® HCl**  
vancomycin  
hydrochloride for oral  
solution, USP  
Equivalent to  
**1g**  
Vancomycin  
**FOR ORAL USE ONLY**

CAUTION—Federal (USA) law prohibits dispensing without prescription.  
Usual Dose—See literature.  
Not For Treatment Of Systemic Infections. Contains Vancomycin Hydrochloride Equivalent to 1 g Vancomycin.  
Keep Tightly Closed  
Prior to Reconstitution: Store at Controlled Room Temperature 59° to 86°F (15° to 30°C)  
After Reconstitution: The solution should be refrigerated and used within two weeks. Mix the contents of this vial with distilled or deionized water (20 mL). Mix thoroughly to dissolve.  
When reconstituted with 20 mL, each 5 mL contains approximately 250 mg of Vancomycin.  
Eli Lilly and Company  
Indianapolis, IN 46285, USA  
● WW 0742 AMX ●  
Exp. Date/Control No.