

STABILITY DATA FOR DRUGS USING HOMEPUMP* DISPOSABLE AMBULATORY INFUSION SYSTEMS

Avanos Medical is responsible for the stability data provided herein. These data are not intended to endorse any specific drug product or dosage for medical use. Always refer to the drug manufacturer's prescribing information when administering any drug with the Homepump* System.

The Homepump Eclipse* and Homepump C-Series* are Disposable Elastomeric Infusion Systems. The Homepump Eclipse* is indicated for antibiotic therapy. The Homepump C-Series* is indicated for continuous infusion of medications for chemotherapy and pain management through intravenous, intra-arterial, intramuscular, subcutaneous or epidural routes. The Homepump Eclipse* and Homepump C-Series* are ideal for ambulatory patients or patients receiving home or alternate site care.

The Homepump Eclipse* and Homepump C-Series* are not intended for the delivery of blood, blood products, lipids or fat emulsions.

The system uses elastomeric pressure to administer the medication and flow restricting tubing or a glass orifice in the set to regulate the flow. The Homepump Eclipse* and Homepump C-Series* provide a drug delivery system that is simple and safe to use for pharmacist, nurse, and patient alike.

These Guidelines for the administration of medications using the Homepump Eclipse* and Homepump C-Series* were developed as a result of testing performed by independent laboratories, and after a review of various medical publications and manufacturers' product information. These Guidelines should be used as a reference only; they are not to replace specific instructions from physicians or pharmacists with experience and additional information about administering these drugs.

Not all of the listed drugs are available in the United States.

The stability data provided in these Guidelines relates to chemical stability of the drugs tested, and not to sterility.† The pharmacist dispensing the drug is responsible for ensuring proper preparation using validated aseptic techniques to prevent microbiological contamination. For practice and quality standards, refer to USP. <797> Pharmaceutical Compounding - Sterile Preparations.

REFERENCES

1. Testing completed by Beckman Industrial Corp., U.S.A.
2. Testing completed by Pyramid Laboratories, U.S.A.
3. Testing completed by Centre Antoine Lacassagne, France.
4. Testing completed by Karolinska Hospital, Dept. of Clinical Pharmacology, Sweden.
5. Testing completed by Nycomed Pharma, Norway.
6. Jhee SS et al. Stability of ondansetron hydrochloride in a disposable, elastomeric infusion device at 40C. *Am J Hosp Pharm.* 1993; 50:1918-20.
7. Chung KC, Chin A, Gill MA. Stability of granisetron hydrochloride stored in a disposable elastomeric infusion device. *Am J Health-Syst Pharm.* 1995; 52:1541-3.
8. Trissel, Lawrence A. *Handbook on Injectable Drugs*, 14th edition, Bethesda, Maryland: American Society of Hospital Pharmacists, 2007.
9. Data on file, Merck Manufacturing Division.
10. Manufacturer's Product Information.
11. Stewart S, Warren F, Johnson S, Golante L. Stability of Ranitidine in Intravenous As mixtures stored frozen, refrigerated, and at room temperature. *AMJ Hospital Pharm Sept.* 1990; 47:2043-2045
12. Das Gupta, V, Stewart, KR, Nohria, S. Stability of Vancomycin HCl in 5% Dextrose and 0.9% Sodium Chloride Injections. *American Journal of Hospital Pharmacy*, July 1986: 43:1729-1731.
13. Testing completed by National Corporation of Swedish Pharmacies, Central Laboratory, Stockholm, Sweden.
14. Department of Pharmacy and Pharmacology, University of Bath, England.
15. Pharmacy Academic Practice Unit, University of Derby, United Kingdom.
16. Testing completed by Fresenius Kabi Limited, Cardiff University, United Kingdom.
17. Data on file, Cubist Pharmaceuticals.
18. Stendal, Tove. et al. Drug stability and pyridine, generation in ceftazidime injection stored in an elastomeric device. *AMJ Health System Pharmacy.* Oct. 1998;55:683-685.
19. Justification data on file.

NS: Normal Saline
SW: Sterile Water

D5W: Glucose/5% Dextrose in Water
RTU: Ready to Use.

The storage times reflect the times selected by Avanos Medical and do not necessarily represent the limits of acceptable stability.

† Stability data of drugs tested in the Homepump Eclipse* and Homepump C-Series* relates to chemical stability only and not to microbiological stability.

†† Special attention must be paid to the drug's potential for precipitation which may occur depending on preparation, storage conditions, concentration, pH and diluent.

‡ Susceptible to crystallization when refrigerated.

STABILITY DATA FOR DRUGS USING HOMEPUMP ECLIPSE* AND HOMEPUMP C-SERIES* DISPOSABLE AMBULATORY INFUSION SYSTEM.

The drugs listed in the **non-shaded** areas have been tested by independent laboratories to verify chemical stability in the Homepump Eclipse* and Homepump C-Series*. The drugs listed in the **shaded** areas are references provided by outside sources on stability in other containers. Refer to the reference indicated for more detailed stability information.

| MEDICATION | CONCENTRATION | DILUENT | ROOM | REFRIGERATED | FROZEN | REFERENCES |
|----------------------------|----------------------|---------|---------|--------------|----------|------------|
| ACYCLOVIR Na | 10 mg/ml | NS | 10 days | 30 days†† | - | 1 |
| AMIKACIN S04 | 10 mg/ml | NS | 24 hrs | 10 days | 30 days | 1 |
| | 10-20 mg/ml | NS | 24 hrs | 28 days | - | 16 |
| AMINOPHYLLINE | 5-25 mg/ml | NS | 24 hrs | 28 days | - | 16 |
| AMPICILLIN Na | 20 mg/ml | NS | 8 hrs | 3 days | - | 1 |
| AMPICILLIN Na-SULBACTAM Na | 30+15 mg/ml | NS | - | 3 days | - | 2 |
| AZITHROMYCIN | 1-2 mg/ml | NS/D5W | 24 hrs | 7 days | - | 8 |
| AZLOCILLIN | 50 mg/ml | NS | 24 hrs | 7 days | - | 2 |
| AZTREONAM | 26.7 mg/ml | NS | 7 days | 7 days | - | 3 |
| | 20-30 mg/ml | NS | - | 14 days | - | 2 |
| | 5-20 mg/ml | NS | - | 28 days | - | 15 |
| | 60 mg/ml | NS | 24 hrs | 28 days | - | 15 |
| CASPOFUNGIN Acetate | 0.2, 0.28, 0.5 mg/ml | NS | 60 hrs | 14 days | - | 9 |
| CEFAZOLIN Na | 20 mg/ml | NS | 24 hrs | 7 days | - | 1 |
| CEFEPIME | 20 mg/ml | NS | 24 hrs | 14 days | - | 2 |
| CEFOPERAZONE Na | 2-300 mg/ml | NS | 24 hrs | 5 days | - | 10 |
| | 2-50 mg/ml | D5W | 24 hrs | 5 days | - | 10 |
| | 50 mg/ml | D5W | - | - | 3 weeks | 10 |
| CEFOTAXIME Na | 16.66 mg/ml | NS | 24 hrs | - | - | 1 |
| CEFOTETAN Disodium | 10-40 mg/ml | NS/D5W | 24 hrs | 4 days | 1 week | 8 |
| | 20 mg/ml | NS/D5W | - | - | 60 days | 8 |
| CEFOXITIN Na | 20 mg/ml | NS/D5W | 24 hrs | 13 days | - | 8 |
| CEFTAZIDIME | 20 mg/ml | NS | 18 hrs | 7 days | 84 days | 1 |
| | 5-30 mg/ml | NS | - | 28 days | - | 15 |
| | 5-40 mg/ml | NS | 24 hrs | 14 days | - | 2 |
| | 60 mg/ml | NS | - | 14 days | 14 days | 18 |
| | 60 mg/ml | NS | - | 14 days | - | 15 |
| CEFTIZOXIME Na | 20, 40 mg/ml | NS/D5W | 48 hrs | 7 days | - | 8 |
| CEFTRIAXONE Na | 20 mg/ml | NS | 72 hrs | - | - | 1 |
| CEFTRIAXONE Na | 10, 20, 40 mg/ml | NS/D5W | 72 hrs | 10 days | - | 8 |
| | 10-40 mg/ml | NS/D5W | - | - | 26 weeks | 8 |
| CEFUROXIME Na | 1-30 mg/ml | NS/D5W | 24 hrs | 7 days | - | 8 |
| | 5, 10 mg/ml | NS/D5W | - | - | 30 days | 8 |
| CIPROFLOXACIN | 2 mg/ml | None | 24 hrs | 27 days | - | 16 |
| CISPLATIN†† | 0.5 mg/ml | NS | 28 days | - | - | 8 |
| CLINDAMYCIN PO4 | 10 mg/ml | NS | 24 hrs | 10 days | - | 1 |
| CLINDAMYCIN PO4 | 6, 9, 12 mg/ml | NS/D5W | 16 days | 32 days | 8 weeks | 8 |
| CYCLOPHOSPHAMIDE | 4.5 mg/ml | NS | 7 days | 7 days | - | 3 |
| DAPTOMYCIN | 20 mg/ml | NS | - | 10 days | - | 17 |
| DEFEROXAMINE MESYLATE | 5 mg/ml | NS | 12 days | - | - | 2 |
| | 5-160 mg/ml | SW | - | 28 days | - | 15 |
| | 73 mg/ml | NS | 7 days | 28 days | - | 16 |
| DOXORUBICIN HCl | 2 mg/ml | NS | - | 48 hrs | - | 1 |

STABILITY DATA FOR DRUGS USING HOMEPUMP ECLIPSE* AND HOMEPUMP C-SERIES* DISPOSABLE AMBULATORY INFUSION SYSTEM.

The drugs listed in the **non-shaded** areas have been tested by independent laboratories to verify chemical stability in the Homepump Eclipse* and Homepump C-Series*. The drugs listed in the **shaded** areas are references provided by outside sources on stability in other containers. Refer to the reference indicated for more detailed stability information.

| MEDICATION | CONCENTRATION | DILUENT | ROOM | REFRIGERATED | FROZEN | REFERENCES |
|----------------------------------|---|----------------------|---------------------------------|--------------------------------------|-------------------|----------------------|
| DOXYCYCLINE | 0.1-1 mg/ml 1 mg/ml | NS/D5W D5W | 48 hrs - | 3 days - | - 8 weeks | 8 8 |
| ERTAPENEM Na | 10 mg/ml 20 mg/ml | NS NS | 24 hrs 18 hrs | 7 days 5 days | - - | 9 9 |
| ETOPOSIDE | 0.1-0.4 mg/ml | NS | 9 days | - | - | 4 |
| FLUCLOXACILLIN | 10 mg/ml 20, 30 mg/ml 40, 50 mg/ml | NS NS NS | 24 hrs 24 hrs 24 hrs | 21 days 14 days 7 days | - - - | 16 16 16 |
| FLUCONAZOLE | 2 mg/ml | RTU | 24 hrs | 14 days | - | 2 |
| FLUOROURACIL†† | 50 mg/ml 1-25 mg/ml 50 mg/ml | RTU NS RTU | 8 weeks 45 days 45 days | - 45 days - | - - - | 1 14 14 |
| FOLINIC ACID or LEUCOVORIN Ca | 4 mg/ml | NS | 7 days | 7 days | - | 3 |
| FOSCARNET Na | 12 mg/ml 24 mg/ml | NS/D5W RTU | 7 days 7 days | 14 days 14 days | - - | 1 1 |
| FUROSEMIDE | 0.5-10 mg/ml | NS | 4 days | 7 days | - | 16 |
| GANCICLOVIR Na†† | 5 mg/ml 2-5 mg/ml | NS NS | 24 hrs 7 days | 15 days - | - - | 1 3 |
| GENTAMICIN SO4 | 0.8 mg/ml 4.8 mg/ml | NS NS | 24 hrs 24 hrs | - 28 days | - - | 1 15 |
| GENTAMICIN SO4 | 1 mg/ml | NS/D5W | - | - | 30 days | 8 |
| GRANISETRON HCl | 0.02 mg/ml | NS D5W | - - | 7 days 14 days | - - | 7 7 |
| IMIPENEM-CILASTATIN Na | 5 mg/ml | NS | - | 1 day | - | 1 |
| IMIPENEM-CILASTATIN Na | 5 mg/ml | NS | 10 hrs | 2 days | - | 8 |
| levofloxacin | 5 mg/ml | NS/D5W | 72 hrs | 14 days | 6 months | 8 |
| MEROPENEM | 5 mg/ml 5-10 mg/ml 10 mg/ml 20 mg/ml | NS NS NS NS | 26 hrs - 20 hrs 14 hrs | 4 days 4 days 4 days 3 days | - - - - | 13 15 13 13 |
| METHOTREXATE Na | 0.03 mg/ml 1.25 - 12.5 mg/ml | D5W NS | 7 days 7 days | - 105 days | - - | 8 8 |
| METHYLPREDNISOLONE Na | 10 mg/ml | NS | 24 hrs | 7 days | - | 2 |
| METRONIDAZOLE | 5 mg/ml | RTU | 24 hrs | 10 days‡ | - | 2 |
| MORPHINE HCL | 10-40 mg/ml | RTU | 6 weeks | 6 weeks | - | 5 |
| MORPHINE SO4 | 20 mg/ml | NS | 7 days | - | - | 3 |
| NAFCILLIN Na | 10 mg/ml | NS | 24 hrs | 3 days | - | 1 |
| NORMAL SALINE | 0.9% NaCl | NS | 15 days | 15 days | - | 19 |
| OFLOXACIN | 0.4-4 mg/ml | NS/D5W | 72 hrs | 14 days | - | 8 |
| ONDANSETRON HCL | 0.03-0.3 mg/ml | NS/D5W | - | 14 days | - | 6 |
| OXACILLIN Na | 10-100 mg/ml 10-30 mg/ml 10-100 mg/ml | NS D5W D5W | 4 days - - | 7 days 4 days - | - - 30 days | 10 10 10 |

STABILITY DATA FOR DRUGS USING HOMEPUMP ECLIPSE* AND HOMEPUMP C-SERIES* DISPOSABLE AMBULATORY INFUSION SYSTEM.

The drugs listed in the **non-shaded** areas have been tested by independent laboratories to verify chemical stability in the Homepump Eclipse* and Homepump C-Series*. The drugs listed in the **shaded** areas are references provided by outside sources on stability in other containers. Refer to the reference indicated for more detailed stability information.

| MEDICATION | CONCENTRATION | DILUENT | ROOM | REFRIGERATED | FROZEN | REFERENCES |
|---------------------------------------|--|-------------------|----------------------------|-------------------------------|--------------|----------------|
| PENICILLIN G - K | 10,000 U/ml 20,000 U/ml | D5W NS | 24 hrs 24 hrs | 24 hrs 4 days | 30 days - | 8 8 |
| PIPERACILLIN Na | 30 mg/ml 10-80 mg/ml | NS NS | 24 hrs 24 hrs | 7 days 14 days | 30 days - | 1 2 |
| PIPERACILLIN Na/ TAZOBACTAM Na | 18 mg/ml + 2.3 mg/ml 10 + 1.25 mg/ml - 80 + 10 mg/ml | D5W NS | 7 days 24 hrs | - 28 days | - - | 3 16 |
| Quinupristin/Dalfopristin | 2 mg/ml | D5W | 5 hrs | 54 hrs | - | 8 |
| RANITIDINE HCl | 0.5-2 mg/ml | NS/D5W | 7 days | 30 days | 60 days | 11 |
| RIFAMPIN | 0.75 mg/ml | D5W | 7 days | - | - | 3 |
| TEICOPLANIN | 1-4 mg/ml | NS | 24 hrs | 28 days | - | 16 |
| TERBUTALINE S04 | 4 µg/ml 150, 350 µg/ml 500 µg/ml | D5W D5W D5W | 7 days 7 days 7 days | 28 days 28 days 28 days | - - - | 16 16 16 |
| TICARCILLIN Disodium CLAVULANATE K | 31 mg/ml | NS | 24 hrs | 7 days | - | 2 |
| TOBRAMYCIN S04 | 0.8 mg/ml 0.2 mg/ml | NS NS | 24 hrs 24 hrs | 14 days 7 days | - - | 1, 2 2 |
| VANCOMYCIN HCL | 5 mg/ml 5, 10, 15 mg/ml | NS NS | 24 hrs 24 hrs | 14 days 28 days | - - | 1 16 |
| VANCOMYCIN HCL | 5 mg/ml | D5W | 17 days | 63 days | - | 12 |

For more information please visit: avanosmedicaldevices.com
Call 800-448-3569 in the United States and Canada.

Page 4 of 4