

Infusion Drug List: pH, Osmolality, reported phlebitis

Drug	Diluent	pH	mOsmol/L	Phlebitis*
Acyclovir	NS @ 5mg/ml	10.5-11.6	316	yes
Amikacin	NS @ 5mg/ml	3.5-5.5	349	
Aminophylline	NS @ 5mg/ml	8.6 - 9	327	
Amiodarone	D5W @ 2mg/ml	4.1		yes
Amphotericin B	D5W @ 0.1mg/ml	5.7	256	yes
Amphotericin B Albecet	D5W @ 1-2mg/ml	5.5 - 6	~280	yes
Amphotericin B Ambisome	D5W @ 1-2mg/ml	5 - 6	~280	yes
Amphotericin B Amphotec	D5W @ 0.2-0.8mg/ml	5 - 6	~280	yes
Ampicillin - Sulbactam	NS 100ml	9 (8 - 10)	~400	yes
Ampicillin 1 & 2 gm	NS 100ml	9 (8 - 10)	328 - 372	
Amrinone	NS @ 2.5mg/ml	3.2 - 4	~300	yes
Azithromycin 500 mg	NS @ 2mg/ml	6.4 - 6.8	~280	yes
Aztreonam 1 gm	SWI 10ml	6 (4.5-7.5)		
Aztreonam 1 - 2 gm	NS 100 ml	6 (4.5-7.5)	315-352	
Aztreonam 1- 2 gm Frozen	Dextrose 50ml	5.0 - 5.6	270 - 330	
Bleomycin	NS@3units/ml	4.5 - 6	~300	
Carboplatin	D5W 0.2 - 2 mg/ml	5 - 7	~250	
Carmustine	D5W 250 - 500ml	5.6 - 6		
Caspofungin	NS @ 0.28-0.35 mg/ml	6.6		yes
Cefamandole 1 gm	SWI 10 ml	6-8.5	466	
Cefamandole 1 gm	NS 100ml	7 (6-8.5)	314	
Cefazolin 1 - 2 gm	SWI 10 ml	4.5-7	293	
Cefazolin 1 - 2 gm	NS 100 ml	4.5-7	317 - 351	
Cefazolin 1 gm Frozen	Dextrose 50ml	5.4 - 6.4	270 - 330	
Cefazolin 500mg Frozen	Dextrose 50ml	5.4 - 6.4	270 - 330	
Cefepime 1 - 2 gm	NS 100 ml	4 - 6	307	
Cefmetazole 2gm	NS 100 ml	4.2 - 6.2	317	
Cefoperazone 1 gm	SWI 10ml	5 (4.5-6.5)	290	
Cefoperazone 1 gm	NS 100ml	5 (4.5-6.5)	307	
Cefoperazone 1gm Frozen	Dextrose 50ml	5.3 - 5.8	276 - 324	
Cefoperazone 2 gm Frozen	Dextrose 50ml	5.3 - 5.8	276 - 324	
Cefotaxime 1 - 2 gm	NS 100 ml	5-7.5	344 - 351	
Cefotaxime 1 gm	SWFI 10 ml	5-7.5	357	
Cefotaxime 1- 2 gm Frozen	Dextrose 50ml	6.2 - 6.8	270 - 330	
Cefotetan 1 gm	NS 100 ml	4.5-6.5	~380	
Cefotetan 2 gm	NS 100 ml	4.5-6.5	~420	
Cefotetan 1- 2 gm Frozen	Dextrose 50ml	5.0 - 6.4	270 - 330	
Cefotetan 1 gm	SWI 10 ml	4.5-6.5	400	
Cefoxitin 1 - 2 gm	NS 100 ml	4.2-8	319 - 355	
Cefoxitin 1 gm	SWI 10 ml	4.2-8	390	
Cefoxitin 1- 2 gm Frozen	Dextrose 50ml	5.9 - 6.6	270 - 330	
Ceftazidime 1 gm	SWI 10 ml	5.5 - 8	240	
Ceftazidime 1 gm Frozen	Dextrose 50ml	5.4 - 6.0	270 - 330	
Ceftazidime 1-2 gm	NS 100 ml	5.5 - 8	330	
Ceftazidime 2 gm	SWI 20 ml	5.5 - 8	240	
Ceftazidime 2 gm Frozen	Dextrose 50ml	5.4 - 6.0	270 - 330	
Ceftizoxime 1 gm	SWI 10 ml	5.5-8	350	
Ceftizoxime 1 gm	NS 100ml	6 - 8	320	
Ceftizoxime 1-2 gm Frozen	Dextrose 50ml	6.7 - 8.0	270 - 330	
Ceftriaxone 1 - 2 gm	NS 100 ml	6.6-6.7	350	
Ceftriaxone 1 gm	SWI 10 ml	6.6-6.7	423	
Ceftriaxone 1-2gm Frozen	Dextrose 50ml	6.2 - 6.9	270 - 330	
Cefuroxime 0.75 - 1.5g	NS 100 ml	6-8.5	~300	
Cefuroxime 1.5 gm Frozen	Dextrose 50ml	5.2 - 5.8	270 - 330	
Cefuroxime 1gm	SWI 10ml	6-8.5	357	

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Cefuroxime 750mg Frozen	Dextrose 50ml	5.2 - 5.8	270 - 330	
Chloramphenicol 1 gm	SWI 10 ml	6.4-7	344	
Chloramphenicol 1 gm	NS 100 ml	6.4-7	330	
Cidofovir	NS 100ml	7.4	~300	
Cimetidine	NS 50ml	3.8 - 6	314	
Ciprofloxacin 200 mg	D5W 100 ml	3.3-4.6	285	yes
Ciprofloxacin 400 mg	D5W 200 ml	3.3-4.6	285	yes
Cisplatin	NS 0.05 - 2mg/ml	3.5 - 6	~300	
Cladribine	NS 500 ml	5.7 - 8	~300	yes
Clindamycin 600 mg	NS 100 ml	6.3 (5.5-7)	294	
Clindamycin 900 mg	NS 100 ml	6.3 (5.5-7)	294	
Cyclophosphamide	NS 250ml	6.9 (3 - 7.5)	~300	
Cytarabine	NS @ 100mg/ml	5 (4-6)	~300	
Dacarbazine	10mg/ml SWI	3 - 4	109	
Dacarbazine	NS 250 ml	3 - 4	~300	
Daclizumab 5mg/ml	NS 50 ml	6.9	~300	
Dactinomycin	SW 0.5 mg/ml	5.5 - 7	189	
Dactinomycin	NS or D5W 50 ml	5.5 - 7	~300	
Daunorubicin HCl	NS 15ml	4.5 - 6.5	~300	
Daunorubicin HCl	NS 100ml	4.5 - 6.5	~300	
Deferoxamine	SW @ 250mg/ml	4 - 6		
Dexrazoxane	NS @ 5mg/ml	3.5 - 5.5		yes
Dextrose 10%	NA	4.0 (3 - 6.5)	505	
Dextrose 5%	NA	4.0 (3 - 6.5)	252	
Dextrose 5% Sod Chl 0.45%	NA	4.0 (3 - 6.5)	406	
Dextrose 5% Sod Chl 0.45%+KCl 20mEq	NA	4.0 (3 - 6.5)	447	
Dextrose 5% Sod Chl 0.45%+KCl 40mEq	NA	4.0 (3 - 6.5)	487	
Dextrose 5% Sod Chl 0.9%	NA	4.0 (3 - 6.5)	560	
Dobutamine HCL	NS @ 4mg/ml	3.5 (2.5-5.5)	280	yes
Docetaxel	NS 0.3-0.9mg/ml			yes
Dolasetron	SW @ 20mg/ml	3.2 - 3.8	285	yes
Dopamine HCL	D5W	3.3(2.5-4.5)	277	yes
Doxorubicin	SW 2 mg/ml	2.5 - 4.5	280	
Doxorubicin	NS @ 2 mg/ml	3.8 - 6.5		
Doxorubicin HCL Liposome	D5W 250ml	6.5		
Doxycycline 100mg-200mg	NS @ 1mg/ml	1.8-3.3	310	
Enalaprilat	D5W 50ml	6.5 - 7.5		
Epirubicin - Ellence	SW 2mg/ml	3.0		
Epirubicin - Pharmorubicin	SW 2mg/ml	4 - 5.5		
Erythromycin 500 mg	NS 100 ml	7(6.5 - 7.7)	291	yes
Erythromycin 1 gm	NS 250 ml	7(6.5 - 7.7)	290	yes
Etoposide	NS 0.2-0.4 mg/ml	3 - 4		yes
Etoposide phosphate	NS 10mg/ml	3 - 4	~290	yes
Famotidine	NS 50ml	5 - 5.6	290	
Floxuridine	NS @ 10mg/ml	4 - 5.5	355	
Fluconazole 100 mg	NS 50 ml	4 - 8	315	
Fluconazole 200 mg	NS 100 ml	4 - 8	315	
Fludarabine	NS 100ml	7.2 - 8.2	352	
Fluorouracil	SW @ 50mg/ml	9.2	650	
Foscarnet	SW @ 24mg/ml	7.4	271	yes
Fosphenytoin	NS @1.5-25PE/ml	8.6 - 9		yes
Ganciclovir < 500 mg	NS 100 ml	11.0	320	yes
Gatifloxacin	D5W 10mg/ml	3.5 - 5.5		yes
Gemcitabine	NS 40mg/ml	2.7- 3.3		
Gentamicin 100 - 250 mg	NS 100 ml	3-5.5	280 - 290	

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Granisetron	SW 1mg/ml	4.7 - 7.3	290	
Hemin for injection	SW @ 7mg/ml	8 - 9.5	~300	yes
Heparin sodium	NS 1000 units/ml	5 - 8	283-384	
Heparin sodium (Premix D5)	25,000 u /250 ml	5.5 (5 - 6)	298	
Heparin sodium (Premix NS)	25,000 u /250 /ml	7 (6 - 8)	322	
Hydrocortisone	SW @ 50mg/ml	7 - 8	360	
Hydromorphone	SW 10mg/ml	4 - 5.5	~333	
Idarubicin	1 mg/ml	3.5		
Ifosfamide	NS@0.6-20mg/ml	6		
Imiglucerase	NS 20 units/ml	6.1		
Imipenem/cilastatin	NS @ 5mg/ml	6.5-7.5	310	yes
Infliximab	NS@0.4-4mg/ml	7.2	~300	
Intravenous immunoglobulins	3% to 12%	4 - 7.2	~300	
Irinotecan	D5W @ 0.12-1.1mg/ml	3 -3.8		
Iron Dextran Intravenous	NS @ 50mg/ml	5.2 - 6.5	2000	yes
Iron Dextran Intravenous	NS @ 0.1mg/ml	5.2 - 6.5		yes
Itraconazole	NS 3.3mg/ml	4.8		yes
Leucovorin	SW 10mg/ml	8.1	274	
Levofloxacin 250 mg	D5W 50 ml	3.8-5.8	~250	yes
Levofloxacin 500 mg	D5W 100 ml	3.8-5.8	~250	yes
Linezolid	Dextrose 2mg/ml	4.8	290	
Meperidine	SW 50mg/ml	3.5 - 6	302	
Meropenem	NS @ 5mg/ml	7.3 - 8.3	~300	yes
Methicillin 1 gm	SWI 10 ml	7.6 (6-8.5)	510	yes
Methicillin 2- 3 gm	100 ml NS	7.6 (6-8.5)	371 - 415	yes
Methotrexate	SW @ 25 mg/ml	8.5	~300	
Methylprednisolone 500 mg	D5W100 ml	7 - 8	301	
Methylprednisolone 1 gm	D5W 250ml	7 - 8	319	
Metoclopramide	SW @ 5mg/ml	4.5 - 6.5	280	
Metoclopramide	NS @ 1.25mg/ml	4.4	285	
Metronidazole	NS @ 5mg/ml	5 - 7	310	
Milrinone	D5W 200mcg/ml	3.2 - 4		
Minocycline	NS@0.1-0.2mg/ml	2 - 2.8	~300	
Mitomycin	SW @ 0.5mg/ml	6 - 8	9	
Mitoxantrone	NS @ 0.2mg/ml	3 - 4.5	~300	yes
Morphine Sulfate	NS 10mg/ml	4 (2.5-6.0)	295	yes
Nafcillin 1 - 3 gm	NS 100 ml	6-8.5	361 - 398	yes
Nafcillin 1-2 gm Frozen	Dextrose 50ml	6.7 - 7.2	276 - 324	yes
Nicardipine	NS @ 0.1mg/ml	3.5	~300	
Octreotide	SW @0.5mg/ml	3.9 - 4.5	279	
Ofloxacin	D5W @ 4mg/ml	3.8 - 5.8	252	
Ondansetron	D5W 32mg/50ml	3.3 - 4	270	
Oxacillin 1 gm	SWI 10 ml	6-8.5	398	yes
Oxacillin 1 - 2 gm	NS 100 ml	6-8.5	321 - 356	yes
Oxacillin 1- 2 gm Frozen	Dextrose 50ml	6.8 - 7.2	270 - 324	yes
Paclitaxel	D5W @ 0.3-1.2 mg/ml	4.4 - 6.5		
Pamidronate	NS @ 0.09mg/ml	6 - 7.4	~300	yes
Pantoprazole 40mg	NS 100ml	9.0-10.0	295	
Parenteral Nutrition	Amino acids-dextrose-fat	5.5	>600	yes
Parenteral Nutrition	Amino acids-dextrose	5.3 - 6.3	>800	yes
Penicillin GK 1-3 MU Frozen	Dextrose 50ml	6.8 - 7.2	276 - 324	
Penicillin GK or Na	NS @ 50units/ml	7 (6-8.5)	420	
Pentamidine IVPB	D5W @ < 3mg/ml	4 - 4.4	455	yes
Phenytoin	NS @ 5mg/ml	12	312	yes
Piperacillin	SWI @ 163mg/ml	5.5-7.5	439	

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Drug	Diluent	pH	mOsmol/L	Phlebitis*
Piperacillin	NS @ 40mg/ml	5.5-7.5	404	
Piperacillin/tazobactam 2.25-4.5gm Frozn	Dextrose 50ml	6.2 - 6.7	270 - 330	
Piperacillin/tazobactam 3.375 gm	NS 100 ml	5.1-5.4	445	
Plicamycin	NS 1000ml	7.0	~300	
Potassium chloride premix	0.4 mEq/ml	5.0	800	yes
Potassium chloride premix	0.3 mEq/ml	5.0	600	yes
Potassium chloride premix	0.2 mEq/ml	5.0	400	
Potassium chloride premix	0.1 mEq/ml	5.0	200	
Quinupristin-dalfopristin	D5W @ 2mg/ml	4.5 - 5		yes
Ranitidine 50mg	NS 50ml	6.7 - 7.3	302	
Rifampin < 600 mg	D5W 100 ml	7.8-8.8		
Rituximab	NS or D5W 1 - 4 mg/ml	6.5		
Sargramostim	NS @ 10mcg/ml	7.1 - 7.7	~300	
Sodium Chloride 0.45%	NA	5.0 (4.5 – 7.0)	154	
Sodium Chloride 0.9%	NA	5.0 (4.5 – 7.0)	308	
Streptozosin	D5W 100mg/ml	3.5 - 4.5		
Sulfamethoxazole/Trimethoprim 80&400/5ml	D5W 100ml	10	541	yes
Teniposide	NS @ 0.4mg/ml	5 (4 - 6.5)		
Thiotepa	NS @ 1mg/ml	5.5 - 7.5	269	
Ticarcillin 3 gm	NS 100 ml	6 - 8	442	
Ticarcillin/clavulanate 3.1gm	SW @ 86mg/ml	6 - 8	573	
Ticarcillin/clavulanate 3.1gm	NS 100 ml	5.5-7.5	450	
Ticarcillin/clavulanate 3.1gm Frozen	Dextrose 50ml	6.8 - 7.2	265 - 305	
Tobramycin 100 - 250 mg	NS 100 ml	3-6.5	290	
Topotecan	D5W 50ml	2.5 - 3.5		
Trastuzumab	NS 250 ml	6	~300	
Trimetrexate	D5W@ 0.25-2mg/ml	3.5 - 5.5		
Vancomycin 1.5 gm	NS 250 ml	2.5-4.5	~300	
Vancomycin 1-1.25gm	NS 250 ml	2.5-4.5	290	
Vancomycin 500mg	NS 100 ml	2.5-4.5	291	
Vancomycin 1 gm Frozen	Dextrose 200ml	3.5 - 4.3	266 - 302	
Vancomycin 500mg Frozen	Dextrose 100ml	3.5 - 4.3	266 - 302	
Vinblastine	NS 1mg/ml	3.5 - 5	278	
Vincristine	SW 1mg/ml	3.5 - 5.5	610	
Vindesine	NS 1mg/ml	4.2 - 4.5		
Vinorelbine	D5W@1.5-3mg/ml	3.5		yes
Zidovudine	D5W @ 4mg/ml	5.5	~260	yes
*Phlebitis means the drug produces phlebitis when the pH and osmolarity are acceptable				
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