

Preparation of Dextrose and Electrolyte Solutions (+/- Heparin) when stock bags not available

The following table can be used to **INCREASE DEXTROSE CONCENTRATIONS** for bags not commercially available or routinely stocked by pharmacy.

Note: Concentrations of electrolytes already contained in Dextrose bags will be slightly altered during dextrose manipulation but is not considered clinically significant in the short-term.

For Pharmacy turnaround times during regular pharmacy hours, see [Medication Management Policy 3.12](#).

Desired solution	Additive	Stock Bag	250 mL bag		290 mL bag		500 mL bag		1000 mL bag	
			Volume to withdraw from stock bag	Volume of Dextrose 50% to add to bag	Volume to withdraw from stock bag	Volume of Dextrose 50% to add to bag	Volume to withdraw from stock bag	Volume of Dextrose 50% to add to bag	Volume to withdraw from stock bag	Volume of Dextrose 50% to add to bag
D7.5W	Dextrose 50% (500 mg/mL)	D5W +/- additives	13.9 mL	13.9 mL	16.11 mL	16.11 mL	27.8 mL	27.8 mL	55.6mL	55.6 mL
D10W	Dextrose 50% (500 mg/mL)	D5W +/- additives	27.78 mL	27.78 mL	32.22 mL	32.22 mL	55.56 mL	55.56 mL	111.11 mL	111.11 mL
D12.5W	Dextrose 50% (500 mg/mL)	D10W +/- additives	15.6 mL	15.6 mL	18.1 mL	18.1 mL	31.2 mL	31.2 mL	62.5 mL	62.5 mL
D15W	Dextrose 50% (500 mg/mL)	D12.5W +/- additives	16.7 mL	16.7 mL						
D17.5W	Dextrose 50% (500 mg/mL)	D15W +/- additives	17.9 mL	17.9 mL						
D20W	Dextrose 50% (500 mg/mL)	D15W +/- additives	35.7 mL	35.7 mL						
D25W	Dextrose 50% (500 mg/mL)	D20W +/- additives	41.67 mL	41.67 mL						
D30W	Dextrose 50% (500 mg/mL)	D20W +/- additives	83.33 mL	83.33 mL						
D12.5W 250 mL		Currently stocked in PICU and ER Trauma pyxis medstations.								
D15W 250 mL		Currently stocked in PICU pyxis medstation.								
D20W 250 mL		Currently stocked in PICU and ER Trauma pyxis medstations.								

NOTE: Above values are calculated using alligation.

Example: Using a 250 mL Dextrose 15% stock bag (with or without electrolytes), how much Dextrose 50% is needed to make it a Dextrose 17.5% bag?

Dextrose 15% **50% subtract 17.5% = 32.5 (# of parts of Dextrose 15% needed)**

Dextrose 17.5% (desired concentration)

32.5 parts Dextrose 15% + 2.5 parts Dextrose 50% = 35 parts total.

Dextrose 50% **17.5% subtract 15% = 2.5 (# of parts of Dextrose 50% needed)**

For a 250 mL bag, the following amount of each ingredient is needed: Dextrose 15% 250 mL x 32.5 parts = 232.1 mL (remove 17.9 mL from 250 mL stock bag to get 232.1 mL)
35 parts total

Dextrose 50% 250 mL x 2.5 parts = 17.9 mL
35 parts total

The following table can be used to determine volumes of **ADDITIVES** to add to a single or multi component stock solution. If the total volume of the additives is more than 5% of the total bag volume, that volume of additives must be removed from the stock bag prior to adding anything to the bag. NOTE: DO NOT add more potassium to an existing bag already containing potassium.

Desired solution containing:	Additive/ Concentration	Stock Bag	Volume of Additive (mL)				
			100 mL Stock Bag	250 mL Stock Bag	290 mL Pharmacy prepared bag	500 mL Stock Bag	1000 mL Stock Bag
Dextrose (various strengths) + NaCl 0.225% = 3.85 mEq%	NaCl 4 mEq/mL (4 mmol/mL)	Dextrose Bag		2.41	2.79	4.81	9.62
Dextrose (various strengths) + NaCl 0.45% = 7.7 mEq%	NaCl 4 mEq/mL (4 mmol/mL)	Dextrose Bag		4.81	5.58	9.62	19.2
Dextrose (various strengths) + NaCl 0.9% = 15.4 mEq%	NaCl 4 mEq/mL (4 mmol/mL)	Dextrose Bag		9.62	11.16	19.2	38.5
Calcium (as Gluconate) 1.6 mEq%	Calcium Gluconate 10% 100 mg/mL (0.465 mEq/mL Ca ²⁺)	Any Dextrose or NaCl Bag		8.6	10	17.2	34.4
Potassium Chloride	See After-Hours Preparation of IV solutions using Potassium Chloride (KCl) 1 mEq/mL Solution						
Sodium Acetate 5 mEq%	Sodium Acetate 4 mEq/mL (4 mmol/mL)	Dextrose Bag		3.1	3.6	6.2	12.5
Sodium Acetate 10 mEq%	Sodium Acetate 4 mEq/mL (4 mmol/mL)	Dextrose Bag		6.2	7.2	12.5	25
Sodium Acetate 15 mEq%	Sodium Acetate 4 mEq/mL (4 mmol/mL)	Dextrose Bag		9.4	10.9	18.8	37.5
Sodium Bicarbonate 5 mEq%	Sodium Bicarbonate 1 mEq/mL (1 mmol/mL)	Dextrose Bag		12.5	14.5	25	50
Sodium Bicarbonate 10 mEq%	Sodium Bicarbonate 1 mEq/mL (1 mmol/mL)	Dextrose Bag		25	29	50	100
Sodium Bicarbonate 15 mEq%	Sodium Bicarbonate 1 mEq/mL (1 mmol/mL)	Dextrose Bag		37.5	43.5	75	150
Heparin 0.5 unit/mL	Heparin 1000 units/mL	Any Premixed Stock Bag	0.05	0.12	0.14	0.25	0.5
Heparin 1 unit/mL	Heparin 1000 units/mL	Any Premixed Stock Bag	0.1	0.25	0.29	0.5	1

Use premixed bags where possible.

See Pulse for list of [Pre-Made Pharmacy IV Solution Bags](#).

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