

Neonatal Parenteral medications stability Manual  
King Abdullah University Hospital

Generic Name	initial strength	Storage of the intact vial	Stability of vial after reconstitution		Stability of premixed solution		NOTES
			RT	REF	RT	REF	
Adenosine IV	6mg/2ml	Store below 25°C. Do not refrigerate.	Use fresh. (The product should be used immediately after opening.)	-	-	-	* Do not use if any particles or discolorations are noticed in the solution. * Any unused product or waste material should be disposed.
Amikacin IV	50mg/ml 250mg/ml	Store intact vials at 20°C to 25°C	-	-	24 hours	60 days at 4°C (39°F), or 30 days at -15°C (5°F)	* Dilute in a compatible solution (eg, NS, D <sub>5</sub> W) to a final concentration of 0.25-5 mg/mL.
Aminophylline IV	25mg/ml	Store at controlled room temperature 15° to 25°C	-	-	24 hours	NA	* Protect from light. *Do not use solutions if discolored or if crystals are present. * SINGLE-DOSE CONTAINER. Discard unused portion.
Amiodarone IV	50 mg/ml	Store at 20°- 25°	-	-	24 hours in polyolefin or glass, or for 2 hours in PVC.	-	* Infusions >2 hours must be administered in a non-PVC container (eg, glass or polyolefin). * Do not

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							use evacuated glass containers <b>* Protect from light</b>
Atropine IV	0.6 mg/ml	room temperature of 15°C to 30°C. avoid freezing	Use fresh . Discard unused portion	-	Preparation of bulk atropine solution for mass chemical terrorism at a concentration of 1 mg/mL is stable for 72 hours	Preparation of bulk atropine solution for mass chemical terrorism at a concentration of 1 mg/mL is stable for 72 hours	Administer undiluted by rapid I.V. injection; slow injection may result in paradoxical bradycardia
Calcium Gluconate IV	100 mg /ml	Store at 20°C to 25°C	Use fresh	-	NA	-	* If crystallization has occurred, warming in a 60°C water bath for 15-30 minutes with occasional shaking, may dissolve the precipitate. Cool to body temperature before use. The injection must be clear at the time of use.
Colistin IV	75 mg/ml	Store intact vials (prior to reconstitution) at 20°C to 25°C	7 days	7 days	24 hours	24 hours	-

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Dexamethasone (IV , IM)	4 mg/ml	Store intact vials at 20°C to 25°C Avoid freezing. Do not use if solution is hazy or has a precipitate	NA	NA	Diluted solutions should be used within 24 hours.	-	Dexamethasone may be given iv push undiluted (slowly).
Digoxin IV	250 mcg/ml	Store at 25°C	Use fresh	-	48 hour	48 hours	-
Dobutamine IV	250 mg inj	Store at 20 to 25°C	6 hour	48 hour	48 hour ** Remix solution every 24 Hours.	7 days	* Pink discoloration of solution indicates slight oxidation but no significant loss of potency.
Dopamine IV	10 mg/ml 40 mg/ml	Store at controlled room temperature 15°-30°C	- (WARNING: This is a potent drug: It must be diluted before administration to patient.)	-	24 hours	NA	* Protect from light. Solutions that are darker than slightly yellow should not be used.
Epinephrine (Adrenaline) IV	1 mg	* Store between 20°C to 25°C. * do not freeze or refrigerate. Protect from light.	- * see stability of solution	- * see stability of solution	24 hours	24 hours	* Epinephrine is sensitive to light and air. Protection from light is recommended. *Oxidation turns drug pink, then a

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							brown color. <b>Solutions should not be used if they are discolored or contain a precipitate.</b>
Erythromycin Injection	500 mg 1 g	Store at 20 to 25°C	24 hours	14 days	<b><u>1-If diluted in NSS :</u></b> 8 hours. ** note : Some studies support stability at room temperature or under refrigeration for up to 24 hours. <b><u>2- In 5% Dextrose:</u></b> Up to 2 hours.	If diluted in NSS : 24 hours	
Erythromycin suspension IV	200MG/5 ML SUSP	1-Granules: Prior to mixing, store at <30°C. 2- Powder: Prior to mixing, store at <30°C	-	-	After mixing shouldn't be stored at room temperature.	1-granules After mixing, store under refrigeration and use within 10 days. 2- powder : After mixing, store at ≤25°C (77°F) and use within 35 days.	

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Fentanyl IV	* 0.05 mg/mL	Store at controlled room temperature of 20°C to 25°C	-	-	2 days	2 days * Some studies indicate stability up to 30 days.	* PROTECT FROM LIGHT.
Fluconazole Inj	2 mg/ml	Protect from freezing. Avoid excessive heat. Store injection in glass at 5°C to 30°C (41°F to 86°F). Store injection in plastic flexible containers at 5°C to 25°C (41°F to 77°F). Brief exposure of up to 40°C (104°F) does not adversely affect the product.	-	-	some studies indicate 7 DAYS (RT) <b>if solution is transferred</b> from the original container. <b>Intact containers:</b> Refer to the expiration date on the package	NA	* Do not use if cloudy or precipitated. Infuse over ~1-2 hours
Furosemide Inj	10 mg/ml	*Store at 20 to 25°C * Do not	Use fresh.	-	24 hours.	Do not Refrigerate	Do not use the injection if it is discolored or

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		freeze. * Protect from light.					contains a precipitate.
Gentamicin IV	10mg/ml 40 mg/ml	stored between 2°C to 30°C (but refrigeration is not recommended)	Use fresh. ( but refer ro dilute it in neonates : final concentration for I.V. administration should not exceed 10 mg/mL)	-	48 hours	48 hours	-
Heparin IV	1000 IU/ML VIAL, 5000 IU/ML VIAL	Heparin should be stored at controlled room temperature. *Protect from freezing and temperatures >40°C.			1-Prepared bag: 24-72 hours 2- Premixed bag: After seal is broken, 4 days	1-Prepared bag: 24-72 hours 2- Premixed bag: After seal is broken, 4 days	Heparin solutions are colorless to slightly yellow. Minor color variations do not affect therapeutic efficacy
Hydralazine IV	20 mg/ml	Intact ampuls/vials of hydralazine should not be stored under refrigeration because of possible	-	-	24 hours	Do not refrigerate.	

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		precipitation or crystallization.					
Hydrocortisone		Store at controlled room temperature 20°C to 25°C Protect from light.	After initial reconstitution: 3 days when protected from light	After initial reconstitution: 3 days when protected from light	According to the final concentration : **Stability of concentration 1 mg/mL: 24 hours ** Stability of concentration 2 mg/mL to 60 mg/mL: At least 4 hours	According to the final concentration : **Stability of concentration 1 mg/mL: 24 hours ** Stability of concentration 2 mg/mL to 60 mg/mL: At least 4 hours	
Imipenem-Cilastatin IV	500 mg powder	should be stored at <25°C	10 hours	48 hours	4 hours	24 hours	-
Iron Dextran IV	50 mg/ml	Store at 20°-25°C					IV push not recommended Can be given IM Test dose of 25mg should be given over 5 min Avoid in dextrose
Lidocaine	10mg/ ml 20mg/ ml		Use fresh	-	24 hrs	24 hrs	-

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IV							
Magnesium Sulfate IV	100 mg/ml 500 mg/ml	store at room temperature of 20°C to 25°C, Do not freeze. Refrigeration of solution may result in precipitation or crystallization.	-	-	24 hours	24 hours	Note : <b>Solutions for intravenous infusion must be diluted to a concentration of 20% or less prior to administration</b>
Metronidazole IV	5 mg/ml	Store at 25°C (77°F). Protect from light. Brief exposure up to 40°C does not adversely affect the product. Avoid excessive heat. Do not refrigerate. Do not remove unit from overwrap until ready for use. Discard unused solution.	Use fresh	NA	NA	NA	Note: No dilution or buffering is required. Do not refrigerate



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Midazolam IV	5mg/ml	Store at 20°C to 25°C	-	-	If final concentration of 0.5 mg/mL, is stable for up to 24 hours when diluted with D <sub>5</sub> W or NS. A final concentration of 1 mg/mL in NS has been documented to be stable for up to 10 days	NA	
Morphine IV	10 mg/ml	Store at controlled room temperature of 20°C to 25°C (68°F to 77°F); do not freeze. Protect from light. Degradation depends on pH and presence of oxygen; relatively stable in pH ≤4; darkening of solutions indicate degradation.	-	-	7 days	7 days	Notes : ** When giving morphine I.V. push, it is best to first dilute with sterile water or NS for a final concentration of 1 to 2 mg/mL ** Usual concentration for continuous I.V. infusion: 0.1 to 1 mg/mL in D5W.
Naloxone HCL ( IV )	0.02 mg/ml	Store at 25°C (77°F); protect	-	-	Mixtures should be used within 24	NA	Stable in D <sub>5</sub> W, NS; do not mix with

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(note the auto-injector solution form)	0.4 mg/ml	from light.			hours. After 24 hours, the remaining unused solution must be discarded		alkaline solutions or solutions containing bisulfite or metabisulfite  ** I.V. push: Dilute naloxone 0.4 mg (1 mL ampul) with 9 mL of NS for a total volume of 10 mL to achieve a concentration of 0.04 mg/mL (APS, 2008) I.V. infusion: Dilute naloxone 2 mg in 500 mL of NS or D <sub>5</sub> W to make a final concentration of 4 mcg/mL
Pancuronium IV	1mg/ml 2mg/ml	Refrigerate(2° to 8°C); however, stable for up to 6 months at room temperature.	Use fresh Discard after use	-	It is stable in solution for 48 hours	48 hours	* May be administered undiluted by rapid I.V. injection; for continuous I.V. infusion, dilute to final concentration of 0.01-0.8 mg/mL in D <sub>5</sub> NS, D <sub>5</sub> W, LR, or NS
Phenobarbital	30 mg/ml	Protect from	Use fresh .	NA	NA	NA	* Not stable in

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Amp IV	65 mg/ml	light.	Discard unused portion				aqueous solutions; use only clear solutions. Do not add to acidic solutions; precipitation may occur.
Phenytoin IV	50mg/ ml	Store at room temperature of 15°C to 30°C	Use undiluted drug and administer by slow intravenous injection. USE fresh	-	2 hours	NA	NOTE : can be used undiluted as push or diluted for Intravenous infusion.
Piperacillin/ Tazobactam IV		Store at 20°C to 25°C	If used as bolus : Use single-dose or bulk vials immediately after reconstitution. Discard any unused portion after 24 hours if stored at 20°C to 25°C	Discard after 48 hours if stored refrigerated (2°C to 8°C	up to 24 hours	up to 1 week	
Potassium Chloride IV	-	Store at room temperature; do not freeze	-	-	24 hours	NA	For intravenous use only. Must be diluted prior to injection.

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Ranitidine IV	25mg/ml	** Store between 4°C to 25°C. ** Protect from light.	-use fresh in IM injection.	-	48 Hours	NA	
Salbutamol (Solution for nebulization )	0.5mg/ ml 1mg/ ml	Store at 2°C to 25°C	Use fresh	-	Up to 24 hours.	NA	
Sodium Bicarbonate	4% AMP [10ML] 8.4% BAG [100ML]	Store injection at room temperature. Protect from heat and from freezing. Use only clear solutions	NA	NA	24 hours	NA	** Administer IV either undiluted or diluted in other IV fluid. this can be specified according the concentration that needed and if it is like a direct inj or continuous infusion.
Vancomycin	50mg/ ml		14 days	14 days	7 days	14 days	
Vitamin K	10 mg/ml 1mg/ml 1mg/0.5ml	Store at 15°C to 30°C. Protect from light.	Administer shortly after preparation.	Administer shortly after preparation.	-	-	**INTRAVENOUS and INTRAMUSCULAR routes should be restricted to those situations where the

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							subcutaneous route is not feasible and the serious risk involved is considered justified.
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**@@ Insulin stability:**

**Humulin® R, Humulin® R U-500:** Store unopened vials in refrigerator between 2°C and 8°C (36°F to 46°F); do not freeze; keep away from heat and sunlight.

Once punctured (in use), vials may be stored for up to 31 days in the refrigerator between 2°C and 8°C (36°F to 46°F) or at room temperature of ≤30°C .

**Novolin® R:** Store unopened vials in refrigerator between 2°C and 8°C until product expiration date or at room temperature ≤25°C for up to 42 days; do not freeze; keep away from heat and sunlight.

Once punctured (in use), store vials at room temperature ≤25°C for up to 42 days (this includes any days stored at room temperature prior to opening vial); refrigeration of in-use vials is not recommended.

**For I.V. infusion :**

1- Humulin® R: Stable for 48 hours at room temperature or for 48 hours under refrigeration followed by 48 hours at room temperature.

2- Novolin® R: Stable for 24 hours at room temperature

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**Ampicillin Stability :**

<b>Reconstitution</b>		
I.V.: Minimum volume: Concentration should not exceed 30 mg/mL due to concentration-dependent stability restrictions.		
Standard diluent: 500 mg/50 mL NS; 1 g/50 mL NS; 2 g/100 mL NS.		
<b>Stability:</b>		
Room Temperature (25° C)		
<b>Diluent</b>	<b>Concentrations</b>	<b>Stability Periods</b>
Sterile Water for Injection	up to 30 mg/mL	8 hours
Isotonic Sodium Chloride	up to 30 mg/mL	8 hours
5% Dextrose in Water	10 to 20 mg/mL	1 hour
5% Dextrose in Water	up to 2 mg/mL	2 hours
5% Dextrose in 0.45% NaCl	up to 2 mg/mL	2 hours
Lactated Ringer's Solution	up to 30 mg/mL	8 hours
Refrigerated (4° C)		
<b>Diluent</b>	<b>Concentrations</b>	<b>Stability Periods</b>
Sterile Water for Injection	30 mg/mL	48 hours
Sterile Water for Injection	up to 20 mg/mL	72 hours
Isotonic Sodium Chloride	30 mg/mL	24 hours
Isotonic Sodium Chloride	up to 20 mg/mL	48 hours
Lactated Ringer's Solution	up to 30 mg/mL	24 hours
5% Dextrose in Water	up to 20 mg/mL	1 hour
5% Dextrose and 0.45% NaCl	up to 10 mg/mL	1 hour

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**Abbreviations:**

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**NA: not Available or Not Applicable .**

**RT: room temperature , REF : refrigerator**