

Safety Use of Concentrated Electrolytes

BIL	CONCENTRATED ELECTROLYTES	RECOMMENDED CAUTIONARY LABEL
1	*Magnesium Sulphate 50% Injection. ^{1,2}	
2	*Potassium Chloride 1g/10ml Injection. ^{1,2,4}	<p>1. **CAUTION** Concentrated KCL Fatal If Injected Undiluted.¹</p> <div style="border: 2px solid red; padding: 5px; text-align: center;"> **CAUTION** CONCENTRATED KCL FATAL IF INJECTED UNDILUTED. </div> <p>2. By IV Infusion only, cannot be given as IV Bolus.</p>
3	*Potassium Dihydrogen Phosphate Injection. ^{1,2,4}	<p>Must Be Diluted Before Use. Direct Injection Can Be Instantly Fatal.³</p> <div style="border: 2px solid red; padding: 5px; text-align: center;"> MUST BE DILUTED BEFORE USE. DIRECT INJECTION CAN BE INSTANTLY FATAL </div>
4	*Potassium Acetate Injection USP 2mEq/ml 20ml. ^{1,2}	Must Be Diluted Before Use⁶
5	*Sodium Chloride 3% Injection. ^{1,2,4}	
6	*Sodium Chloride 20% Injection. ^{1,2,4}	Must Be Diluted Before Use⁷
7	*Sodium Glycerophosphate for addition into Infusion Solution, 20ml vial. ²	Must Be Diluted Before Use⁸
8	*Sodium Bicarbonate 8.4% w/v Injection	
9	*Calcium Gluconate 10% Injection	
10	*Calcium Chloride 1g/10ml Injection	

*High Alert Medications

Safety Measures¹:

1. All concentrated electrolytes are high alert medications, the medications should have **HIGH ALERT MEDICATION** labels on **storage shelves, containers, product packages OR loose vials/ampoules**.
2. To store concentrated electrolyte solutions in **designated/separate areas**.
3. **Perform independent countercheck** before preparation, dispensing and administration-at least two healthcare personnel should check the correct product, dose, dilution, labelling, route, and rate as per safety protocol.

References:

1. High Alert Medication Guide 2nd edition
2. High-Alert Medications Heparin, Concentrated Electrolytes and Magnesium: Practical Strategies in Pursuit of Safety. Institute for Safe Medication Practice (ISMP),2022
3. Dilution Guide for High Alert Medication, 2011
4. Control of Concentrated Electrolyte Solutions. WHO, the Joint Commission & Joint Commission International. Patient Safety Solutions | volume 1, solution 5 | May 2007.
5. Hospital Formulary Edition 1/2025.
6. Potassium Acetate Injection USP 2mEq/ml Product Leaflet. Zyphar's Pharmaceuticals
7. INJECSOL S20 Product Leaflet. Sodium Chloride 20% w/v INJECTION BP. Ain Medicare SDN BHD
8. GLYCOPHOS concentrate for solution for infusion. Sodium Glycerophosphate pentahydrate Product Leaflet. Fresenius Kabi