

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: 1px solid red; padding: 5px; text-align: center; color: red; font-weight: bold;"> **CAUTION** CONCENTRATED KCL FATAL IF INJECTED UNDILUTED. </div> <p>2. By IV Infusion only, cannot 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: 1px solid red; padding: 5px; text-align: center; color: red; font-weight: bold;"> 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