



REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

sodium bicarbonate



Effective Date: May14-2014

Revised Date: Jan 2024

CLASSIFICATION

**Electrolyte,
Alkalinizer**

OTHER NAMES

NaHCO₃

PAGE

1 of 2

ADMINISTRATION POLICY:

- IV Bolus – May be administered by a nurse
- Intraosseous - May be administered by a nurse
- IV Intermittent – May be administered by a nurse
- IV Infusion - May be administered by a nurse
- IM Injection – Not recommended

RECONSTITUTION/DILUTION/ADMINISTRATION:

Available as: 4.2% 0.5 mmol/mL – 10 mL pre-filled syringe
8.4% 1 mmol/mL – 50 mL vial and pre-filled syringe

1 mmol = 1 mEq Bicarbonate

NOTE: Flush IV tubing or catheters containing other medications with normal saline BEFORE and AFTER administering sodium bicarbonate.

IV Bolus: Route reserved for cardiac arrest. Over 2 to 5 minutes. Repeat every 10 to 15 minutes or according to blood gases. If 0.5 mmol/mL product not available, dilute 1:1 of 1 mmol/mL product with **sterile water for injection**.

IV intermittent: Dilute in convenient volume of compatible solution. Infuse over 15 to 60 minutes (minimum) or up to 4 hours

IV Infusion: Dilute 50 mL (1 mmol/mL sodium bicarbonate) in 50 mL sterile water for injection.
Final volume: 100 mL Final concentration: 0.5 mmol/mL

Intraosseous: Refer to bolus, intermittent or infusion

DOSAGE:

Cardiopulmonary Resuscitation: **IV bolus/IO:** 1 to 2 mmol/kg per dose every 10 to 15 minutes according to acid-base status
less than 5 kg: 0.5 mmol/mL 2 to 4 mL/kg/dose
greater than or equal to 5 kg: 1 mmol/mL 1 to 2 mL/kg/dose (up to 100 mmol/dose)

Metabolic Acidosis: **IV Intermittent:** dose(mmol) = 0.3 x weight (kg) x base deficit (mmol/L)
Maximum: 5 mmol/kg/4 hours

Replacement: **IV Infusion:** 1 to 2 mmol/kg/hour

Treatment of Hyperkalemia: **IV bolus/IV intermittent:** 0.5 to 1 mmol/kg/dose. May repeat every 10 to 15 minutes until ECG changes reversed (maximum 100 mmol/dose)

Maximum daily dose: 10 mmol/kg/24 hours (less than 2 years old)

Maximum rate : **IV bolus:** 0.5 mmol/kg/minute

Infusion: 2 mmol/kg/hour



REGIONAL PEDIATRIC PARENTERAL DRUG MONOGRAPH

GENERIC NAME

sodium bicarbonate



<p>Effective Date: May14-2014 Revised Date: Jan 2024</p>	<p>CLASSIFICATION Electrolyte, Alkalinizer</p>	<p>OTHER NAMES NaHCO₃</p>	<p>PAGE 2 of 2</p>
--	---	---	------------------------

STABILITY/COMPATIBILITY:

Stability of final admixture: 24 hours at room temperature

Compatibility: Compatible with D5W, D10W, normal saline
DO NOT MIX with *other medications*. *Flush tubing and catheters with normal saline*

PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:

- CV: peripheral edema
- Metabolism: metabolic acidosis, hypernatremia, hypokalemia, hyperosmolality
- Neuro: cerebral alkalosis, intracranial hemorrhage
- Renal: sodium and water retention
- Local: extravasation for IV administration of hypertonic sodium bicarbonate solutions may cause chemical cellulites, tissue necrosis, ulceration or local ischemia

CAUTION:

- patients losing chloride from vomiting or GI suction – risk of metabolic acidosis
- patients on diuretics known to cause hypochloremic alkalosis
- rapid injection (10 mL/minute) of hypertonic sodium bicarbonate (1 mmol/mL) solutions in neonates and children under 2 years of age may cause hypernatremia, a decrease of CSF pressure, and intracranial hemorrhage. Total dose should be less than or equal to 10 mmol/kg/24 hours.
- use sodium bicarbonate only when the acidosis has a significant metabolic component; avoid use in patients with low serum bicarbonate due to chronic respiratory alkalosis
- 1 gram sodium bicarbonate = 12 mEq of sodium and 12 mEq of bicarbonate

ADDITIONAL NOTES AND NURSING CONSIDERATIONS: