

THIAMINE

SYNONYMS	Vitamin B1
BRAND NAME	BIOLOGICAL THERAPIES THIAMINE HYDROCHLORIDE, THIAMINE STEROP
DRUG CLASS	Vitamin
AVAILABILITY	Biological Therapies Thiamine Hydrochloride vial contains 100 mg/mL of thiamine hydrochloride. Also contains disodium edetate and benzyl alcohol. The solution is clear and colourless. ¹ Thiamine Sterop ampoule contains 100 mg/2 mL of thiamine hydrochloride. Also contains sodium hydroxide. The solution is clear and colourless to slightly yellow. ²
WARNING	Hypersensitivity and anaphylactic reactions may occur. Resuscitation facilities must be readily available. ¹
pH	Biological Therapies Thiamine Hydrochloride: 2.5–3.5 ¹ Thiamine Sterop: 2.5–4.5 ²
PREPARATION	Not required
STABILITY	Store below 25 °C. Protect from light. ^{1,2}
ADMINISTRATION	
IM injection	Suitable for adults and children. ^{1,3} Biological Therapies Thiamine Hydrochloride is approved for IM use. Contains benzyl alcohol. ¹
SUBCUT injection	No information
IV injection	For doses up to 100 mg: inject slowly over at least 10 minutes. ^{1,2} May be diluted in 10–20 mL of sodium chloride 0.9% to facilitate slow injection.
IV infusion	Dilute the dose in 100 mL of sodium chloride 0.9% and infuse over at least 30 minutes. ^{1,2,4} May be added to parenteral nutrition solutions. ⁵
IV use for infants and children	Biological Therapies Thiamine Hydrochloride contains benzyl alcohol. ¹ Dilute the dose in a convenient volume of compatible fluid and infuse over 30 minutes. ⁶
COMPATIBILITY	
Fluids	Sodium chloride 0.9% (preferred) ^{1,2} , Hartmann's ^{1,2} , glucose 5% ^{1,2} , glucose 10% ^{1,2} (Glucose can further deplete thiamine stores and precipitate Wernicke encephalopathy. ¹⁻³)
INCOMPATIBILITY	
Fluids	No information
Drugs	Alkaline solutions ¹ , carbonates ¹ , citrates ¹ , solutions that contain sulfites or bisulfites ¹ Aminophylline ⁷ , azathioprine ⁷ , ceftazidime ⁷ , folic acid ⁷ , furosemide ⁷ , ganciclovir ⁷ , hydrocortisone sodium succinate ⁷ , imipenem-cilastatin ⁷ , methylprednisolone sodium succinate ⁷ , phenobarbital ^{1,7} , sodium bicarbonate ⁷
SPECIAL NOTES	For the treatment of Wernicke encephalopathy the intravenous route is preferred. ³ Always give thiamine before glucose when treating hypoglycaemia in patients at high risk of thiamine deficiency i.e. those who drink large amounts of alcohol or who are severely malnourished. Glucose can further deplete thiamine stores and precipitate Wernicke encephalopathy. ¹⁻³ An intradermal test dose is recommended in patients with a history of allergy. ^{1,2} Do not give products that contain benzyl alcohol to neonates.

REFERENCES

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2. Thiamine Sterop. Product information. North Sydney: Boucher & Muir Pty Ltd. Approved 10/07/2024.
3. Water-soluble vitamin deficiencies [June 2023]. In: Therapeutic Guidelines [internet]. Melbourne: Therapeutic Guidelines Limited; June 2024.
4. Latt N, Dore G. Thiamine in the treatment of Wernicke encephalopathy in patients with alcohol use disorders. *Intern Med J* 2014; 44: 911-5.
5. ASHP Injectable drug information 2021. Bethesda, MD: American Society of Health-System Pharmacists; 2021.
6. Paediatric Formulary Committee. BNF for children. London: BMJ group and Pharmaceutical Press; 2024.
7. Thiamine hydrochloride. In: IV Index [internet]. Trissel's 2 clinical pharmaceuticals database (parenteral compatibility) Greenwood Village, CO: IBM Watson Health. Accessed 08/08/2022.