

Benzathine Benzylpenicillin (Lentocilin S 1200): Reconstitution and Administration Instructions for Healthcare Providers

Medication Composition and Storage

- The active ingredient benzathine benzylpenicillin in Lentocilin S 1200 is identical to the active ingredient penicillin G benzathine in Bicillin® L-A.
- Unlike Bicillin® L-A which is a suspension in ready-to-use pre-filled syringes, Lentocilin S 1200 is prepared by reconstituting the powder with lidocaine 1.5% as its solvent prior to administration.
- An ampoule of 4 mL lidocaine 1.5% is supplied with each vial of Lentocilin S 1200 for use as the solvent to reconstitute the powder into a suspension.
- While the 2.4 million units dose of Lentocilin S 1200 is the same as that of Bicillin® L-A for the treatment of syphilis, the **volume** of medication administered when treating with Lentocilin S 1200 will be approximately double that of Bicillin:

Lentocilin S 1200	Bicillin® L-A
Each reconstituted vial contains 1.2 million units benzathine benzylpenicillin in a 4 mL suspension	Each pre-filled syringe contains 1.2 million units penicillin G benzathine in a 2 mL suspension
Total volume per dose to be administered: 8 mL (given in a divided dose of 1.2 million units, 4 mL IM into each ventrogluteal (preferred) or dorsogluteal site at the same visit)	Total volume per dose to be administered: 4 mL (given in a divided dose of 1.2 million units, 2 mL IM into each ventrogluteal (preferred) or dorsogluteal site at the same visit)

- ONE dose of 2.4 million units is from the preparation of TWO vials of Lentocilin S 1200. One reconstituted vial is only one-half of the dose. For individuals receiving 3 weekly doses of syphilis treatment, the same formulation should be used for all 3 doses (ie. 3 sets Lentocilin S or 3 sets Bicillin L-A)
- Lentocilin S 1200 should be stored at 15°C to 25°C in the original package to protect from light and moisture. **DO NOT REFRIGERATE.**
- Once reconstituted, Lentocilin S 1200 should be administered immediately. Do not store reconstituted product for later use.

Supplies Required (for *each unit* of Lentocilin S 1200 to be reconstituted)

- Lentocilin S 1200 vial containing benzathine benzylpenicillin 1.2 million units (powder)
- 4 mL Lidocaine 1.5% glass ampoule (solvent supplied for reconstitution)
- 5 mL syringe
- Filter needle (for drawing lidocaine from glass ampoule)
- Non-filter needle (for adding lidocaine to powder)
- 18g safety needle (for administration of reconstituted suspension to the patient)
- Alcohol pads
- Ampoule breaker or gauze pad

Lentocilin S 1200 Reconstitution (Final concentration = 1.2 million units per 4mL)

PRACTICE TIP: At each needle change, draw back slightly on the syringe plunger before changing the needle to avoid losing volume. This also helps prevent the particulate from clogging at the syringe hub

For **EACH** Lentocilin S 1200 vial:

1. Disinfect the vial stopper using an alcohol pad
2. Tap the ampoule to ensure all the solvent is at the ampoule base.
3. Using an ampoule breaker or piece of gauze, break open the glass ampoule of lidocaine 1.5% by placing your thumb on the One-Point-Cut (OPC) white dot to snap open. Withdraw the lidocaine into the 5mL syringe using the **filter needle**.
4. Draw back on the syringe plunger, remove and discard the filter needle and replace it with a **non-filter needle**. Measure **4mL** of lidocaine to use for reconstitution
5. Insert the needle through the rubber centre of the vial of Lentocilin S 1200. Without touching the powder, carefully inject the lidocaine along the side wall of the vial. Avoid injecting the liquid directly into the powder to minimize foaming and bubbling



6. Mix the suspension by gently rolling/rotating the vial between your two hands. Once mixed, the suspension should appear milky white or white. Do not shake the vial.



7. After handling the vial, disinfect the rubber stopper again using an alcohol pad
8. Using the **non-filter needle**, withdraw the entire volume of solution back into the 5 mL syringe (***The final volume of reconstituted Lentocilin S will be approximately 4 mL per syringe.***)
9. Draw back on the syringe plunger to avoid losing volume and replace the non-filter needle with the **18g needle** that will be used for administering the medication. Gently depress the syringe plunger to remove any air from the syringe.
10. Repeat the above steps to prepare a second syringe unit of 1.2 million units benzathine benzylpenicillin. Use new needles as all needles in each step are single-use only.

Administration of Medication

PRACTICE NOTE: A complete dose of Lentocilin S 2.4 million units should be given as a divided dose of 1.2 million units IM into each ventrogluteal (preferred) or dorsogluteal site at the same visit.

The final volume of reconstituted Lentocilin S will be ***approximately 4 mL per syringe.*** The full amount should be administered. Providers may wish to refer to the medication insert for more information.

There is a paucity of evidence to support maximum volume limits which can be injected to various anatomical sites. Some immunization guidelines suggest based on expert opinion, that up to 5 mL of volume can be safely administered to the ventrogluteal and dorsogluteal sites of an adult. Practitioners should refer to their respective regulatory body Standards and Scope of Practice guidelines and should always use clinical judgement when assessing for appropriate medication administration.

- Lentocilin S 1200 should ONLY be given intramuscularly into the ventrogluteal (preferred) or dorsogluteal sites. DO NOT administer into the deltoid
- The needle for administration of the medication should be at minimum 18g (use of a smaller-bore needle poses the risk of clogging during injection due to the size of the particulate in the medication suspension)
- Position patient so that landmarking of the injection sites bilaterally can be done accurately
- Clean the injection site with an alcohol pad and allow to dry
- Beginning with one side, inject the medication slowly with a constant flow to prevent needle blockage. If the needle clogs, replace it with a new needle
- The injection should be discontinued immediately if there are signs or symptoms of immediate acute pain.
- Repeat in the other side to complete the full dose.
- If a second clinician is available and the patient consents, the two divided doses can be administered simultaneously to the bilateral ventrogluteal (preferred) or dorsogluteal sites.

Visit our [Syphilis Tool Kit for Healthcare Providers](#) page for additional syphilis and Lentocilin S resources:

