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## **Section 1 Introduction**

*References: DNASTABLE® / DNASTABLE® LD Handbook*

DNASTABLE® LD (Liquid-to-Dry) is a liquid that is applied to DNA extracts which are then dried and can be stored at room temperature. During the drying process, DNASTABLE® LD forms a protective seal around the DNA while eliminating the water. The mechanism of action is based on anhydrobiosis (“life without water”) and is used by some organisms to survive in extended dry periods where proteins, DNA, RNA and other cellular components are protected and can be subsequently rehydrated and become functional again.

## **Section 2 Reagents and Verification**

DNASTABLE® LD is purchased from Biomatrix and is stored at ~4°C. Expiration date is set by the manufacturer. It is a critical reagent which requires verification before use in casework.

### Verification

Use DNASTABLE® LD to dry down a previously typed reference sample extract (50 µL) and a corresponding reagent blank extract (50 µL). Rehydrate each of the dried extracts and amplify. Comparison of the original amplification results to the results of the rehydrated extract should not demonstrate a significant (>20%) overall reduction in the average peak heights.

Documentation, to include the electropherograms of previous and rehydrated extracts, will be retained in the annual case record in LIMS. If the amplifications were done as part of a batch, the retained documentation may reference the central log file containing the worksheets and controls.

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**Section 3 Procedure**

1. Retained DNA extracts are dried down upon completion of the technical and administrative reviews of a case record.
2. Spin down the DNA extract by centrifuging at approximately 14,500 rpm for 5 minutes.
3. For DNA extract volumes up to 100 µl, add 20 µl of DNASTable® LD directly to the DNA extract. Mix the sample thoroughly with gentle pipetting. Avoid dispensing bubbles into the sample.
4. Dry the DNA extract solution by placing the uncapped tube in a rack on the lab bench or in a laminar flow ventilation hood (recommended). The uncapped tube may be covered with a Kimwipe®. Approximate drying times are 48-64 hours for 100 µl volumes. Samples must be dried completely for optimal protection and stability when stored at room temperature.
5. Once dry, cap the tube and store in either (a) a dry storage cabinet at room temperature or (b) in a foil-lined, moisture barrier envelope with a silica gel desiccant packet added (also at room temperature). Only one extract may be packaged per foil envelope. Dried extracts are retained long-term in the original evidence packaging.
6. To recover dried samples, add 50 µl of sterile water. Incubate the sample at room temperature for 15 minutes to allow complete rehydration. Mix the sample thoroughly with gentle pipetting. Avoid dispensing bubbles into the sample. Store unused rehydrated samples at room temperature or at 4°C for up to 10 days. Unused samples can be re-dried as in steps 3-4 without appreciable DNA loss.

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***Appendix A Revision History***

This is a newly validated and implemented procedure. As such, there is no revision history for this document.

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