

# Air-drying User Guideline



The guidelines in this document can help users avoid problems in air-drying. For storage and stability, expiry and general handling of these products pre-drying, please refer to the individual Product Handling Guides.

## Safety precautions:

Read and understand the SDS (Safety Data Sheets) before handling the reagents. Copies of these SDSs are available on our website or upon request.

There are several advantages to air-drying, including room temperature shipping and storage, extended shelf-life and increased flexibility in sample volume. In order to be compatible with air-drying however, enzyme preparations must include specialized excipients that preserve the mixture as it is exposed to high temperature and dehydration. An ideal air-dryable formulation should stabilize an enzyme in a dried format and allow very fast rehydration and reactivation of the enzyme preparations, without impacting its performance post rehydration.

## Air-drying Parameters Guidance

Drying parameters in table 1 are suitable for MDX126 - Air-Dryable™ Direct DNA LAMP Blood in a fan-assisted oven. Variation in master mix volume, type of reaction vessel and air-drying equipment will require optimization of the air-drying protocol.

**Table 1.** Air-drying parameters

Mix	Master Mix Volume	Temperature	Time*
MDX126 alone	5 µL *	50 °C	90 min
MDX126 with primers	6 µL †	50 °C	100 min
MDX126 with primers and intercalating dye	6.8 µL ‡	50 °C	110 min

\* Indicated drying time is for 5 µL of the 4x Air-Dryable™ Direct DNA LAMP Blood in PCR tubes or 96-well plates.

† 5 µL of 4x Air-Dryable™ Direct DNA LAMP Blood and 1 µL of 20x primer mix.

‡ 5 µL of 4x Air-Dryable™ Direct DNA LAMP Blood with 1 µL of 20x primer mix and 0.8 µL of 100 µM intercalating dye.

## Determination of moisture content of air-dried material

- Following air-drying, the residual moisture content of dried Air-Dryable™ Direct DNA LAMP Blood should be assessed by Loss on Drying (LOD) test using the formula in table 2.

**Table 2.** LOD test formula

	LOD calculation	Moisture loss after air-drying at 50 °C for 80 min
Moisture loss =	$(W2-W3) / (W2-W1) \times 100$	81% ± 2.0 % (MDX126)
	W1 = weight of empty reaction vessel W2 = weight of reaction vessel containing wet Air-Dryable™ Direct DNA LAMP Blood W3 = weight of reaction vessel containing dried Air-Dryable™ Direct DNA LAMP Blood	82% ± 2.0 % (MDX126 with primers) 85% ± 2.0 % (MDX126 with primers and intercalating dye)

## Optimization

If the Moisture Loss is above the % shown in the table 2 - repeat the procedure with a new batch of master mix and reduce the time in the drying oven by 10 min.

If the Moisture Loss is below the % shown in the table 2 - repeat the procedure with a new batch of master mix and increase the time in the drying oven by 10 min.

## Packaging Guidance

For maximum shelf-life, we suggest to heat seal the air-dried material with desiccant sachet to improve stability.

- Air-dried material must be packaged immediately after the drying cycle
- Dried material should be packaged in heat-sealed foil pouches with 5 g sachet silica

## Technical Support

For any technical enquiries, please contact our Technical Support team via email at: [mbi.tech@meridianlifescience.com](mailto:mbi.tech@meridianlifescience.com)