Air-drying & Post-drying User Guideline

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The guidelines in this document can help users avoid problems in air-drying. For storage and stability, expiry and general handling of these product 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 for 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. The MDX products listed in table 1 are suitable for air-drying.

Air-drying Parameters Guidance

Drying parameters in table 1 are suitable for the Air-Dryable™ qPCR Mix in a convection oven. However, optimization of these parameters is highly suggested as master mix volume, type of reaction vessel and type of drying equipment will affect the optimal air-drying parameters.

Table 1. Air-drying parameters

Master Mix Volume	Temperature	Time**
5 µL	80 °C	20 min

**Indicated drying time is for 5 µL of the 4x Air-Dryable™ qPCR Mix in PCR tubes or 96-well plates.

Determination of moisture content of air-dried material

- Following air-drying, the residual moisture content of air-dried qPCR mix 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 80°C for 20 min
Moisture loss =	(W2-W3) / (W2-W1) x100	95.3 % ±1.1 %
	W1 = weight of empty reaction vessel W2 = weight of reaction vessel containing Air-Dryable mix W3 = weight of reaction vessel containing dried Air-Dryable mix	

Optimization

If the Moisture Loss 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 packaging 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 2 g sachet silica

Associated Products

Table 1. Air-dry compatible products

Product	Catalog number
Air-Dryable™ RT-qPCR Mix	MDX095
Air-Dryable™ qPCR Mix	MDX082
Air-Dryable™ Direct DNA qPCR Blood, 4x	MDX092
Air-Dryable™ Direct DNA qPCR Plant, 4x	MDX116
Air-Dryable™ Direct DNA qPCR Saliva, 4x	MDX130
Air-Dryable™ Direct DNA qPCR Stool, 4x	MDX140
Glycerol-Free Taq HS 50 U/µL	MDX011

Bioline USA Inc.
USA

Tel: +1 901 382 8716
Fax: +1 901 382 0027

Technical Support

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