Air-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 3 are suitable for air-drying.

Air-drying Parameters Guidance

Drying parameters in table 1 are suitable for the Air-Dryable™ Direct DNA qPCR Saliva in a convection 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*
MDX130 alone	5 µL	80 °C	20 min
MDX130 with primers and probe	6 µL†	80 °C	26 min

* Indicated drying time is for 5 µL of the Mix in PCR tubes or 96-well plates.
† 5 µL of 4x Air-Dryable™ Direct DNA qPCR Saliva and 1 µL of 20x primers and probe mix.

Determination of moisture content of air-dried material

- Following air-drying, the residual moisture content of 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
Moisture loss =	(W2-W3) / (W2-W1) x100	90 % ± 2.0 % (MDX130) 94 % ± 2.0 % (MDX130 with primers and probe)
	W1 = weight of empty reaction vessel W2 = weight of reaction vessel containing wet Air-Dryable™ Direct DNA qPCR Saliva W3 = weight of reaction vessel containing dried Air-Dryable™ Direct DNA qPCR Saliva	

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

Associated products

Table 3. Air-dry compatible products

Product	Catalog Number
Air-Dryable™ qPCR Mix	MDX082
Air-Dryable™ Direct DNA qPCR Blood, 4x	MDX092
Air-Dryable™ Direct DNA qPCR Plant, 4x	MDX116
Air-Dryable™ Direct RNA/DNA qPCR Saliva, 4x	MDX131
Air-Dryable™ Direct DNA qPCR Stool, 4x	MDX140
Air-Dryable™ Direct DNA qPCR Urine, 4x	MDX150

Technical Support

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