

## Technical Bulletin

# Malic Acid Quick Test Strips

**Catalog Number MAS001**

## Product Description

L-Malic acid, or L-malate, is a dicarboxylic acid that is made by all living organisms and plays an important role in both the Calvin and Krebs Cycles. Malic acid is frequently used in the food and beverage industries as an additive in products such as wine, beer, and candies. It can be used as an acidity regulator, preservative, or flavor component. In the wine industry, decreasing levels of L-malic acid and increasing levels of L-lactic acid are monitored during malolactic fermentation. As L-malic acid is converted to L-lactic acid, the overall acidity of the wine is reduced which can lead to the improvement of the flavor of the wine.

The Malic Acid Quick Test Strips are based on the L-malate dehydrogenase-catalyzed oxidation of L-malic acid in which the formed NADH reduces a chromogenic reagent. The intensity of the product color is directly proportional to the L-malic acid concentration in the sample. The semi-quantitative detection range of the kit is 0-500 mg/L (undiluted) malic acid.

This kit is suitable for the detection of malic acid in a variety of food and beverage samples.

## Components

The kit is sufficient for 10 tests

- Malic Acid Test Strips (10 strips) 1 Each  
Catalog Number MAS001A
- Sample Development Tubes 10 Each  
(400 µL of Development  
Reagent per tube)  
Catalog Number MAS001B

## Equipment Required but Not Provided

- Pipetting devices and accessories

## Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

The kit is shipped at room temperature. Store components at 2-8 °C. Keep strips dry and out of direct sunlight.

## Preparation Instructions

### Sample Preparation

No initial sample dilution is required. For white wine samples, especially those that have not gone through malolactic fermentation, a 21-fold final dilution of the sample is recommended. Red wine and other acidic samples (fruit juice, beer, etc.) should be diluted 5-fold. Homogenized milk should be diluted 2-fold.

### Procedure

1. Unscrew the cap of one of the Sample Development Tubes and add the Sample volume required according to Table 1.

**Table 1.**  
Sample Dilutions

Final Dilution	Volume of Sample to Add to Tube
21-fold	20 $\mu\text{L}$
5-fold	100 $\mu\text{L}$
2-fold	400 $\mu\text{L}$

2. Replace cap on the Sample Development Tube, securely close the tube, and invert the tube 3-4 times to mix the diluted Sample.
3. Unscrew cap and dip in one of the Malic Acid Test Strips, making sure to fully submerge the yellow reaction pad at the end of the strip. Leave the strip submerged for 5 seconds and then remove the strip and shake gently to remove any excess liquid.
4. Allow the color to develop on the strip for 5 minutes.
5. Compare the color of the reaction pad of the strip with the provided Malic Acid Chart. Multiply the concentration on the chart by the Sample dilution factor (i.e., 2, 5, or 21) to determine the concentration of L-Malic Acid in the original Sample.



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