Technical Bulletin

# Oxalate Quick Test Strips

**Catalog Number MAS010**

## Product Description

Oxalate, or oxalic acid, is a metabolic breakdown product of the Krebs Cycle in eukaryotes and the glyoxylate cycle in other microorganisms. Typically present in the urine of humans and other mammals, oxalate concentration can be used as a measure of kidney function. A high level of oxalate is an indicator for kidney stones, which are primarily made of the insoluble salt calcium oxalate. Measuring oxalate is more accurate than measuring calcium as a marker for kidney stones because calcium is excreted at high concentrations even in normal urine.

The Oxalate Quick Test Strips are based on the enzymatic oxidation of oxalate coupled with a color reaction in a single step. The intensity of product color is directly proportional to the oxalate concentration in the sample. The semi-quantitative detection range of the kit is 0-1.5 mg/dL or 0-170 µM (undiluted) oxalate.

This kit is suitable for the detection of oxalate in serum, plasma, urine, fruits or vegetables, etc.

## Components

The kit is sufficient for 10 tests

- Oxalate Test Strips (10 strips) Catalog Number MAS010A — 1 Each

## Reagents and Equipment Required but Not Provided

- Pipetting devices and accessories
- Activated Carbon Powder (JT Baker Catalog Number E343-07 or equivalent)
- Ethylenediaminetetraacetic acid disodium salt (EDTA) (Catalog Number E5134 or equivalent)
- Corning® Costar® Spin-X® centrifuge tube filters (Catalog Number CLS8169)
- Microcentrifuge capable of RCF ≥ 10,000 × *g*
- 1.5 mL microcentrifuge tubes

## 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

Whole blood samples are **not** compatible with the Oxalate Quick Test Strips.

Most serum and plasma samples can be tested undiluted and require no sample preparation.

Urine requires special treatment and should be prepared per the steps below.

Urine

1. Add 50 mg of activated carbon powder to a tube.
2. Prepare 0.5 M sodium EDTA:
    a. Dissolve 18.6 g of EDTA disodium salt dihydrate in 100 mL of purified water.
    b. Adjust pH to 7.9-8.1.
3. Add 10 µL of prepared 0.5 M EDTA to tube containing activated carbon powder.
4. Add 240 µL of urine to the tube.
5. Place the tube on a shaker for 5 minutes. If a shaker is not available, the sample can be shaken by hand.
6. Using a pipette, carefully add the sample to a 5 kDa cutoff filter.
7. Centrifuge at 10,000 × *g* for 2 minutes. Reserve the effluent for sample testing.

Note: If a cut off filter is not available, an alternative approach is available: Following Step 5, centrifuge the tube at 10,000 × *g* for 10 minutes. Then, carefully transfer the supernatant to a clean tube. Centrifuge again at 10,000 × *g* for 5 minutes. Reserve the supernatant for sample testing.

## Procedure

1. Transfer 10 µL Sample directly onto the reaction pad of an Oxalate Test Strip.
2. Allow color to develop on the strip for 5 minutes.
3. Compare the color of the reaction pad of the strip with the provided Oxalate Chart. If the sample was diluted, multiply the concentration on the chart by the dilution used (e.g., 1.04 for urine) to determine the Oxalate concentration in the original Sample.

## Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

## Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

## Technical Service

Visit the tech service page on our web site at SigmaAldrich.com/techservice.

## Standard Warranty

The applicable warranty for the products listed in this publication may be found at SigmaAldrich.com/terms.