

## Determination of organic acids in wine

### Description

The **ORGANIC ACID SCREENING** system by SunChrom has been developed for the determination of all relevant organic acids in wine, sparkling wine and fruit juices in one single analysis run. In about 20 minutes the user achieves an overview, also called “a fingerprint” about the organic acids of a beverage. This results are important information about the present condition of the sample or later about its development during production process.

The quantitative determination of these parameters is made with HPLC. Only for red wine a minimal sample preparation is necessary. The removal of other matrix effects is performed fully automatically and without being noticed by the user.

### The strong points of the method

The strong point of this method is that both matrix and a.m. substances are separated and detected as single compound and detected with an UV photometer. Therefore the system can be calibrated either with pure substances or with a standard wine. The eluent is only diluted sulfuric acid (1 ml in 1 l water). This makes this analysis not only safe for the environment but also inexpensive.

The analysis requires for the most important acids (tartaric acid, malic acid, lactic acid, acetic acid, citric acid) is less than 20 minutes. It is also possible to determine other interesting acids like shiquimic acid, succinic acid or fumaric acid simultaneously. Fig. 1 shows a chromatogram (“fingerprint”) of a standard wine.

Most of wines are subject to a degradation of malic acid to lactic acid to reduce on a natural way the total acid content through the biological degradation. It is also simply possible to follow up such production process contemporarily or to realize them later. The chromatogram on Fig. 2 shows a wine after the biological decomposition of malic acid. In this case the concentration of lactic acid is, as expected, higher than in a normal wine. Since the concentration of both acids in a natural wine is indirectly proportional to each other, forbidden additions of malic acid can be discovered easily.

One of the most important advantages of chromatographic determination is to recognize particular changes in the samples without looking specifically for them. Within the last few years this analyzer enabled users to discover product falsifications or forbidden additions automatically.

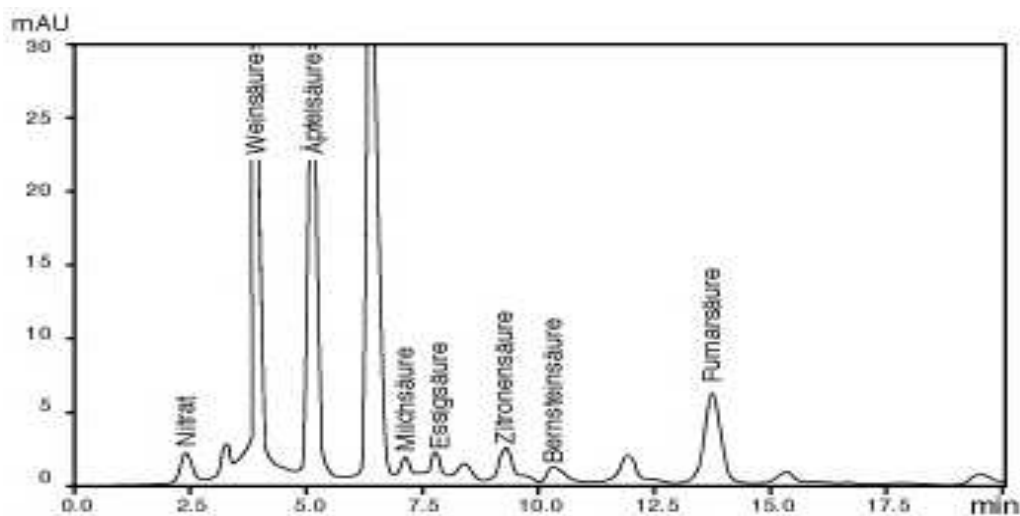


Fig. 1 – Organic acids in a white wine

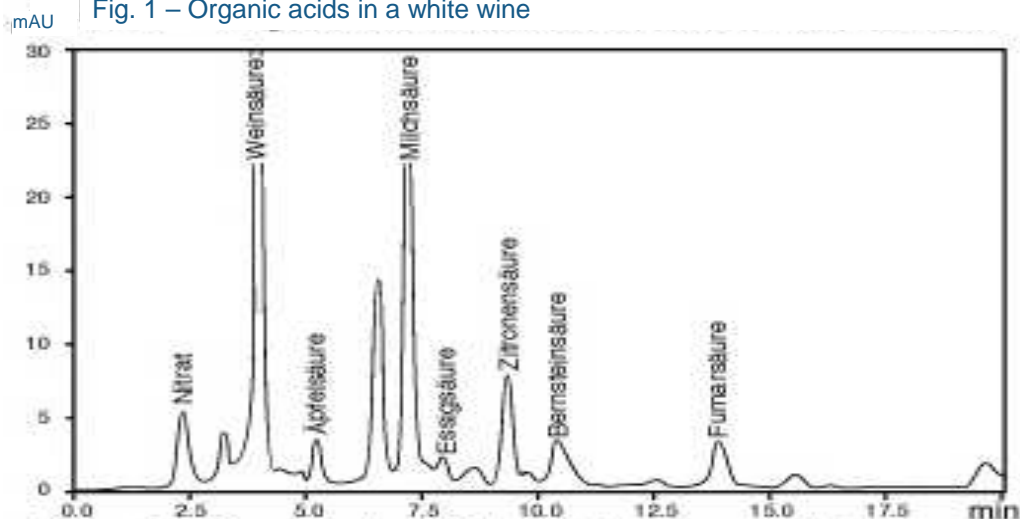


Fig. 2 – Organic acids in a wine after biological degradation of malic acid into lactic acid

## Ordering information

Art.-No.	Short description
458-190.002	complete ACID SCREENING system for determination of all relevant organic acid in wine, sparkling wine and juices
969-190.111	pre-column cartridge 4 x 10 mm
969-190.112	cartridge holder
969-190.113	cartridge holder incl. 2 capillary connection pieces
969-190.101	pre-column 150 x 4,6 mm
969-190.201	main column 300 x 4,6 mm
969-190.320	SS sieves, 5 µm (10)
969-190.321	Teflon seals (10)
969-190.325	glass fiber filters (10)
969-190.332	SS frit 1,9 mm with PEEK ring 0,25" OD
969-190.333	SS frit 4,6 mm with PEEK ring
969-190.340	capillary connection piece 25 cm
969-190.341	capillary connection piece 10 cm
969-195.425	PEEK capillary 1/16" x 0,25 mm (1 m)
969-195.522	PEEK finger tight fitting
189-7010-040	stator for injection valve 7010 (new)
189-7010-039	rotor seal for injection valve 7010
458-195.079	stator for 7010 – replacement part –
189-7750-038	stator for injection valve 7739 (new)
189-7750-016	rotor seal for injection valve 7739
458-195.038	stator for 7739 – replacement part -

**We reserve the right to change specifications, design or price without advance notice.**

