UNITECH SCIENTIFIC CALIFORNIA, USA

UNIFLEX™ REAGENT

Tartaric Acid

Colorimetric Method

Product # TA-F60 (30 Tests), TA-F150 (75 Tests), TA-F500 (250 Tests)

INTENDED USE & DESCRIPTION

Unitech Scientific Tartaric Acid is intended for the determination of tartaric acid in wine and other liquid samples. In the presence of tartaric acid, the reagent forms an orange/red color which is read photometrically.

REAGENTS

	Quantity (mL)/Kit		
	30T	75T	250T
Tartaric Acid Reagent A	60	150	500
NaOH Reagent B	4.8	12	40
Tartaric Acid Std, 3G/L	1	1	5

STORAGE & REAGENT PREPARATION

Components are stable until the labeled expiration date when stored in original container at room temperature (15-30°C.)

PROCEDURE

System parameters: Wavelength 525nm (500 – 550nm), Absorbance Range 0-2.5A at 1cm pathlength.

Note the Zero Standard Cuvette in this protocol is needed to adjust for ABS change following Reagent B addition; two cuvettes are needed for each juice sample (Sample Reaction & Sample Blank, the latter adjusts for ABS from the sample.)

Label one cuvette for each Standard and a Sample Reaction & Sample Blank cuvette for each sample.

1. Pipet 80 uL standard, samples, and water into cuvettes, as shown on the following table, using micropipettes. Wine samples are pipetted into both reaction and sample-blank tubes.
2. Add Reagent A to each reaction cuvette; add water to each Sample Blank cuvette (per table.) Mix and wait 3 min.
3. Dispense Reagent B into each reaction cuvette. Mix, wait 25 minutes.
4. Mix each cuvette again, just prior to reading. Zero spectrophotometer with the Zero Standard Blank cuvette and read the absorbance values.

	Zero Standard Cuvette	Standard Cuvette	Sample Reaction Cuvette	Sample Blank Cuvette
Samples & Standards		80 µL	80 µL	80 µL
DI Water	80 µL			2 mL
Reagent A	2 mL	2 mL	2 mL	
Mix cuvettes, wait 3 minutes				
Reagent B	80 uL	80 uL	80 uL	80 uL
Mix and incubate 25 minutes MIX each cuvette again, just prior to reading. Zero spectrophotometer with "Zero Standard Cuvette" Read Absorbance for all Cuvettes				

CALCULATIONS

1. Samples & Sample Blanks – Calculate Sample A values:
   $A_{SAMPLE} = ABS_{SAMPLE} - ABS_{BLANK}$
   (Sample blank calculations are unnecessary for Standards.)
2. Net Absorbance Values: For standards and samples, subtract the "Zero Standard" absorbance (A_{Zero}):
   Net $A_{STD} = A_{STD} - A_{Zero}$
   Net $A_{SAMPLE} = A_{SAMPLE} - A_{Zero}$
3. Determine Tartaric Acid G/L:
   $$\text{Tartaric Acid G/L} = 3 \times \frac{\text{Net } A_{SAMPLE}}{\text{Net } A_{STANDARD}}$$

LINEARITY

Linearity: This method is linear between 1 and 5 G/L
Sample Dilution: Samples higher than 5 G/L should be diluted with deionized water and re-assayed. Multiply the calculated G/L result by the dilution factor

ACCURACY

This method is subject to relatively minor interference from phenolics and other juice components, which is not completely corrected by Sample Blanking

SAMPLE PREPARATION

Clarification

Turbid samples should be filtered or centrifuged prior to analysis.

Decolorization

This sample blanking protocol avoids the need for decolorization in most cases. If necessary, red wine/juice may be decolorized by mixing 10 mL juice and approximately 0.1 g polyamide powder or polyvinylpoly-pyrrolidone (PVPP), stir for 1 minute and filter.

Manufactured by

Unitech Scientific
19912 Corby Avenue, Lakewood, CA 90715
Tel: 562-924-5150 Fax: 562-809-3140
www.unitechscientific.com