

TEST KIT FOR THE DETERMINATION OF PRIMARY AMINO ACID NITROGEN IN GRAPE JUICE AND WINE FOR DISCRETE ANALYSERS

PRODUCT

Product no. 4B110, for *in vitro* use only

PRINCIPLE OF MEASUREMENT

During fermentation of grape juice, yeasts require a source of nitrogen as a nutrient. Primary amino acids provide a portion of this nitrogen requirement. This test kit is suitable for measuring the Primary Amino Acid Nitrogen (PAAN) content in grape juice and must. In this kit Ortho-phthaldialdehyde (OPA) and N-acetyl-L-cysteine (NAC), in the presence of an alkaline buffer, bind with primary amino acids to form coloured complexes.

The **Yeast Assimilable Nitrogen** (YAN) content of the juice can be determined by adding this PAAN content to the Ammonia Nitrogen content. Ammonia content can be determined by Vintessential Laboratories Enzymatic Discrete Analyser Kit 4B120.

CONTENTS

The kit includes the following reagents:

Reagent No.	Reagent	Quantity	Stability
REAGENT 1	Buffer	19.5 mL x 2	24 months at 4°C
REAGENT 2	NAC	19.5 mL x 2	6 months at 4°C
REAGENT 3	OPA	8.2 mL x 2	6 months at 4°C

Failure to store reagents at the recommended temperature will reduce their shelf life.

SAFETY

- **Wear safety glasses, Reagent R1 is alkaline**
- **The reagents contain sodium azide as preservative. Do not ingest.**

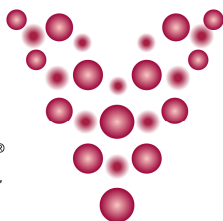
PROCEDURE

Reagent Definition

Reagent	AAN R1	AAN R2	AAN R3
Stable on board (days)	1	1	1
Alarm limit (mL)	1.0mL	1.0mL	1.0mL
Vial volume	20mL	20mL	20mL
Syringe speed	Normal	Normal	Normal

Test Definition

Test type	Photometric
Full name	Amino Acid Nitrogen
Result unit	mg/l
Number of decimals	2
Acceptance	Manual
Dilution 1+	0
Sample type	Wine, Must, Juice





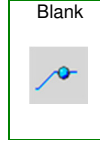
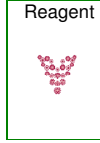




Calibration Parameters

Calibration type	Linear
Repeat time (d)	1
Points/Calibrator	Duplicate
Acceptance	Manual
Curve direction	Ascending
Type of calibrators	Separate

Calibrator	Conc. (mg/l)	Dil. Ratio 1+
Water	0	0
AAN 100	100	0
AAN 200	200	0
AAN 300	300	0

Test Flow

Reagent	Reagent	Sample	Incubation	Blank	Reagent	Incubation	End point
							
Reagent	Reagent	Volume (µl)	Time (sec.)	Resp. min	Reagent	Time (sec.)	Wavelength(nm)
AAN R1	AAN R2	2	300	*	AAN R3	600	340
Volume (µl)	Volume (µl)	Disp. with		Resp. max	Volume (µl)		Side wavel.(nm)
65	65	Water		*	20		NONE
Disp. with	Disp. with	Volume (µl)			Disp. With		
Extra	Extra	98			Extra		
Volume (µl)	Volume (µl)	Wash reagent			Volume (µl)		
10	10	NONE			10		
Wash reagent	Wash reagent				Wash reagent		Meas. type
Water	Water				Water		Fixed timing

REFERENCES

1. Dukes, B.C. and Butzke, C.E. 1998, "Rapid determination of primary amino acids in grape juice using an o-phthalaldehyde/N-acetyl-L-cysteine spectrophotometric assay", *Am.J.Enol.Vitic*, Vol 49, No.2, pp. 125-134.