

GLYCEROL (GLY)

Colorimetric Method for Wine Analysis
MANUAL
RX MONZA

FOR FULL PRODUCT DETAILS, PLEASE REFER TO THE KIT INSERT.

INTENDED USE

For the quantitative analysis of Glycerol in wine. This product is suitable for manual use and on the Rx Monza analyser.

Cat. No.

GY 105	R1a. Buffer	2 x 100 ml
6 x 15 ml	R1b. Reagent	6 x 15 ml
	CAL. Standard	1 x 5.5 ml

SIGNIFICANCE

Glycerol is formed as a by-product of fermentation. It also has a favourable impact on wine quality, as it improves fullness and sweetness.

SAMPLE

Red, white and rosé wine. Turbid samples should be filtered prior to assay.

Samples with glycerol concentration < 0.4 g/L can be run neat. If samples have a glycerol concentration > 0.4 g/L they should be pre-diluted with deionised water prior to assay.

Dilution Table

Estimated concentration of glycerol (g/L)	Dilution with water	Dilution Factor (F)
< 0.400	No dilution required	1
0.400 - 4.0	1 + 9	10
4.0 - 40	1 + 99	100
> 40	1 + 999	1000

Samples which require dilution must be multiplied by their dilution factor following measurement to obtain actual glycerol concentration.

SAFETY PRECAUTIONS AND WARNINGS

For the analysis of food and wine. Not for use in diagnostic procedures. Do not pipette by mouth. Exercise the normal precautions required for handling laboratory reagents.

Solution R1a contains Sodium Azide. Avoid ingestion or contact with skin or mucous membranes. In case of skin contact, flush affected area with copious amounts of water. In case of contact with eyes or if ingested, seek immediate medical attention.

Sodium Azide reacts with lead and copper plumbing, to form potentially explosive azides. When disposing of such reagents flush with large volumes of water to prevent azide build up. Exposed metal surfaces should be cleaned with 10% sodium hydroxide.

Please dispose of all biological and chemical materials according to local guidelines.

Health and Safety Data Sheets are available on request.

The reagents must be used only for the purpose intended by suitably qualified laboratory personnel, under appropriate laboratory conditions.

STABILITY AND PREPARATION OF REAGENTS

R1a. Buffer

Contents ready for use. Stable up to the expiry date when stored at +2 to +8°C.

R1b. Reagent

Reconstitute one vial of Reagent R1b with 15 ml of Buffer R1a. Stable for 14 days when stored at +2 to +8°C, or 3 days at +15 to +25°C protected from light.

CAL. Standard

Contents ready for use. Stable up to the expiry date when stored at +2 to +8°C.

MATERIALS PROVIDED

Buffer
Reagent
Standard

PROCEDURE

Select an open channel in the Run Test screen, enter the assay parameters exactly as they appear on the attached sheet and save. Select run and carry out a water blank as instructed.

Pipette into a cuvette:

	S0 Blank	S0	S1 Blank	S1	Sample Blank	Sample
ddH2O	15µl	15µl	---	---	---	---
CAL Standard	---	---	15µl	15µl	---	---
Sample	---	---	---	---	15µl	15µl
Buffer (R1a)	500µl	---	500µl	---	500µl	---
Reagent (R1b)	---	500µl	---	500µl	---	500µl

Mix and incubate for 5 minutes at +37°C or for 10 minutes at +20 to +25°C. Insert the cuvette into the Rx Monza flowcell holder and press read.

FOR MANUAL USE

Using semi-micro cuvette

Wavelength:	520 nm
Cuvette:	1 cm light path
Temperature:	20-25°C or 37°C
Measurement:	against reagent blank

Pipette into cuvette:

	Standard blank	Reagent blank	Standard	Sample blank	Sample
Distilled Water	30µl	---	---	---	---
Sample	---	---	---	30µl	30µl
Standard	---	30µl	30µl	---	---
Buffer (R1a)	1.00ml	---	1.00ml	---	1.00ml
Reagent (R1b)	---	1.00ml	---	1.00ml	---

Mix, incubate for 5 minutes at +37°C or 10 minutes at +20 to +25°C. Measure the absorbance of the sample (A_{sample}), sample blank ($A_{\text{sample blank}}$), standard (A_{standard}), and standard blank ($A_{\text{standard blank}}$) against the reagent blank within 30 minutes.

CALIBRATION FOR RX MONZA

Calibration is recommended on change of reagent lot or as indicated by quality control procedures, using the Randox Glycerol Standard supplied in the kit.

MANUAL CALCULATION

$$A_{\text{sample}} - A_{\text{sample blank}} = \Delta A_{\text{sample}}$$

$$A_{\text{standard}} - A_{\text{standard blank}} = \Delta A_{\text{standard}}$$

$$\text{Concentration (mg/l)} = \frac{\Delta A_{\text{sample}}}{\Delta A_{\text{standard}}} \times \text{Standard Concentration}$$

SPECIFIC PERFORMANCE CHARACTERISTICS

The following performance characteristics were obtained using an Rx Monza analyser in cuvette mode running at a temperature of +37°C.

LINEARITY

This test is linear up to a glycerol concentration of 400 mg/L. Samples above this concentration should be diluted as described in the dilution table.

SENSITIVITY

The minimum detectable concentration of Glycerol was determined as 5 mg/L.

PRECISION

Within run precision

	Level 1	Level 2	Level 3
Mean mg/l	30.38	165.45	315.42
SD	0.894	1.538	2.531
CV (%)	2.9	0.93	0.8
n	20	20	20

Between run precision

	Level 1	Level 2	Level 3
Mean mg/l	31.03	162.18	281.19
SD	1.591	4.283	7.086
CV (%)	5.13	2.64	2.52
n	20	20	20

Monza Parameters			Monza Calibration			
Report Name	Delay Time	Cuvette	Date & Time	Curve Type	Repl	
GLY	2 sec	10 mm CUVETTE		linear	2	
Assay Mode	Read Time	Ref Low	Standard	Conc.	ΔA/min	Factor
I-PT-S BLANK	2 sec		S0	0		
			S1	*		
Pri Wavelen	Unit	Ref High	S2			
510 nm	mg/L		S3			
Sec Wavelen	Format	Min Lin Lim	S4			
NONE	###.#	5.0	S5			
Temperature	Replicates	Max Lin Lim	S6			
37°C	1	400.0	S7			
			S8			
			S9			
			S10			
			S11			
%Linearity	Asp Volume	Slope a	± Repl Lim	± Fact Dev%	Curve Fit Lim	
		1				
Min RX Abs	Samp volume	Intercept b	Curve Fit-R			
	15.0 µl	0.000				
Max RX Abs	R1 volume	Assay Name2				
	500.0 µl					
Min Rgt Abs	R2 Volume	Report Name2				
	500.0 µl					
Max Rgt Abs	R3 Volume					
C1 Mean	C2 Mean	C3 Mean				
C1 2SD	C2 2SD	C3 2SD				

*Data entered by user, lot-specific value

12 Jan 15 vs