

## CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek. Certificate Number. 2317548

Catalogue Number	29560
Lot Number	A0468051
Description	Glycerol, for analysis, 86-88% wt% aqueous solution
CAS Number	56-81-5
Quality Test/Release Date	09/Jan/2025
Suggested retest date	09/Jan/2028
Country of Origin	BELGIUM
Declaration of Origin	synthetic
BSE/TSE	synthetically made

Result Name	Units	Specifications	Test Value
Appearance (Color)		Clear colorless	Clear colorless
Appearance (Form)		Viscous liquid	Viscous liquid
Infrared spectrum		Conforms	Conforms
Titration Iodometric	%	86.0 to 88.0	86.1
Water	%	12.0 to 14.0 (K.F.)	12.4 (K.F.)
Heavy metals (as Pb)	ppm	=<1	=<1
Sulfated ash	%	=<0.005	=<0.005
Free acid (CH <sub>3</sub> COOH)	%	=<0.002	=<0.002
Refractive index		1.4520 to 1.4550 (20°C, 589 nm)	1.4527 (20°C, 589 nm)
Density	g/ml	(20/4°C) 1.224 to 1.232	(20/4°C) 1.23
Arsenic (As)	ppm	=<0.5	=<0.5
Chloride (Cl)	ppm	=<1	=<1
Sulfate (SO <sub>4</sub> )	ppm	=<5	=<5
Ammonium (NH <sub>4</sub> )	ppm	=<5	=<5
Iron (Fe)	ppm	=<5	=<0.5
Free alkali (NH <sub>3</sub> )	%	=<0.0005	=<0.0005
Substance darkened by H <sub>2</sub> SO <sub>4</sub>		Passes test	Passes test
Fatty acid esters	%	=<0.05	=<0.05
Reducing substances	%	=<0.003	=<0.003

Geert Torfs  
Supervisor, QC

Products are processed under ISO 9001:2015 quality management systems and samples are tested for conformance to the noted specifications. Certain data may have been supplied by third parties. We disclaim the implied warranties of merchantability and fitness for a particular purpose, and the accuracy of third-party data or information associated with the product. Products are for research and development use only. Products are not for direct administration to humans or animals. It is the responsibility of the final formulator or end user to determine suitability, and to qualify and/or validate each product for its intended use.

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of the catalogue number listed above.