

## CERTIFICATE OF ANALYSIS

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by Intertek Global  
Certificate Number: CERT-0120633

Catalogue Number	G37
Lot Number	254971
Description	GLYCERIN, USP/FCC/EP/BP/JP
CAS Number	56-81-5
Quality Test/Release Date	24/Sep/2025
Suggested retest date	24/Sep/2027
Country of Origin	United States
Declaration of Origin	Plant
BSE/TSE	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.

Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear, colorless liquid
British Pharmacopeia Grade - ACIDITY - ALKALINITY	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - ALDEHYDES	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - APPEARANCE OF SOLUTION	REPORT	= CLEAR AND COLORLESS	CLEAR AND COLORLESS
British Pharmacopeia Grade - ASSAY	%	Inclusive Between 98.0 - 101.0	99.9
British Pharmacopeia Grade - CHLORIDES	ppm	<= 10	<10
British Pharmacopeia Grade - ESTERS	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - HALOGENATED COMPOUNDS (AS CL)	ppm	<= 35	<35
British Pharmacopeia Grade - IDENTIFICATION B (by IR)	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - IDENTIFICATION C (Relative Density)		Inclusive Between 1.258 - 1.268	1.265
British Pharmacopeia Grade - IDENTIFICATION A (Refractive Index)		Inclusive Between 1.470 - 1.475	1.474
British Pharmacopeia Grade - IMPURITY A	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - REFRACTIVE INDEX @ 20 DEG C		Inclusive Between 1.470 - 1.475	1.474
British Pharmacopeia Grade - RESIDUAL SOLVENTS	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - SUGARS	PASS/FAIL	= PASS TEST	PASS TEST
British Pharmacopeia Grade - SULFATED ASH	%	<= 0.01	<0.01
British Pharmacopeia Grade - WATER	%	<= 2.0	<2.0
EP Grade - ACIDITY OR ALKALINTY	PASS/FAIL	= PASS TEST	PASS TEST
EP Grade - ALDEHYDES	ppm	<= 10	<10
EP Grade - APPEARANCE OF SOLUTION	REPORT	= CLEAR AND COLORLESS	CLEAR AND COLORLESS
EP Grade - ASSAY	%	Inclusive Between 98.0 - 101.0	99.9
EP Grade - CHLORIDES	ppm	<= 10	<10
EP Grade - ESTERS	PASS/FAIL	= PASS TEST	PASS TEST
EP Grade - HALOGENATED COMPOUNDS (AS CL)	ppm	<= 35	<35
EP Grade - IDENTIFICATION INFRARED SPECTROPHOTOMETRY (TEST B)	PASS/FAIL	= PASS TEST	PASS TEST

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.

EP Grade - IDENTIFICATION RELATIVE DENSITY (TEST A)		Inclusive Between 1.258 - 1.268	1.265
EP Grade - IDENTIFICATION A (Refractive Index)		Inclusive Between 1.470 - 1.475	1.474
EP Grade - IMPURITY A	PASS/FAIL	= PASS TEST	PASS TEST
EP Grade - REFRACTIVE INDEX @ 20 DEG C		Inclusive Between 1.470 - 1.475	1.474
EP Grade - RESIDUAL SOLVENTS	PASS/FAIL	= PASS TEST	PASS TEST
EP Grade - SUGARS	PASS/FAIL	= PASS TEST	PASS TEST
EP Grade - SULFATED ASH	%	<= 0.01	<0.01
EP Grade - WATER	%	<= 2.0	<2.0
FCC Grade - ASSAY	%	Inclusive Between 99.0 - 101.0	99.8
FCC Grade - CARBONIZABLE SUBSTANCES	PASS/FAIL	= PASS TEST	PASS TEST
FCC Grade - CHLORINATED COMPOUND	%	<= 0.003	<0.003
FCC Grade - COLOR	PASS/FAIL	= PASS TEST	PASS TEST
FCC Grade - FATTY ACIDS ESTERS	PASS/FAIL	= PASS TEST	PASS TEST
FCC Grade - IDENTIFICATION A	PASS/FAIL	= PASS TEST	PASS TEST
FCC Grade - IDENTIFICATION B	PASS/FAIL	= PASS TEST	PASS TEST
FCC Grade - IGNITION RESIDUE	%	<= 0.01	<0.01
FCC Grade - LEAD (Pb)	mg/kg	<= 1	<1
FCC Grade - SPECIFIC GRAVITY @ 25 C		>= 1.259	1.264
FCC Grade - WATER	%	<= 1.0	<1.0
Japanese Pharmacopeia Grade - ACIDITY AND ALKALINITY	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - ACROLEIN, GLUCOSE, & REDUCING	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - AMMONIUM	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - ARSENIC	ppm	<= 2	<2
Japanese Pharmacopeia Grade - ASSAY	%	Inclusive Between 98.0 - 101.0	99.9
Japanese Pharmacopeia Grade - CALCIUM	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - CARBONIZABLE SUBSTANCES	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - CHLORIDE	%	<= 0.001	<0.001
Japanese Pharmacopeia Grade - COLOR	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - Di Ethylene Glycol	%	<= 0.1	<0.1
Japanese Pharmacopeia Grade - ETHYLENE GLYCOL	%	<= 0.1	<0.1
Japanese Pharmacopeia Grade - FATTY ACIDS AND ESTERS	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - HEAVY METALS	ppm	<= 5	<5
Japanese Pharmacopeia Grade - IDENTIFICATION (ALL LISTED)	PASS/FAIL	= PASS TEST	PASS TEST
Japanese Pharmacopeia Grade - Impurities other than Ethylene Glycol, DiEthylene Glycol and Glycerin	%	<= 0.1	<0.1
Japanese Pharmacopeia Grade - Impurities other than Glycerin	%	<= 1.0	<1.0
Japanese Pharmacopeia Grade - REFRACTIVE INDEX @ 20 DEG C		>= 1.470	1.474
Japanese Pharmacopeia Grade - RESIDUE ON IGNITION	%	<= 0.01	<0.01
Japanese Pharmacopeia Grade - SPECIFIC GRAVITY		>= 1.258	1.265
Japanese Pharmacopeia Grade - SULFATE	%	<= 0.002	<0.002
Japanese Pharmacopeia Grade - WATER	%	<= 2.0	<2.0
USP Grade - ASSAY	%	Inclusive Between 99.0 - 101.0	99.9
USP Grade - CHLORIDE	ppm	<= 10	<10
USP Grade - CHLORINE COMPOUNDS	ppm	<= 30	<30
USP Grade - COLOR	PASS/FAIL	= PASS TEST	PASS TEST
USP Grade - FATTY ACID ESTERS	PASS/FAIL	= PASS TEST	PASS TEST
USP Grade - IDENTIFICATION A	PASS/FAIL	= PASS TEST	PASS TEST

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USP Grade - IDENTIFICATION B DIETHYLENE GLYCOL	%	<= 0.10	<0.10
USP Grade - IDENTIFICATION B ETHYLENE GLYCOL	%	<= 0.10	<0.10
USP Grade - IDENTIFICATION C	PASS/FAIL	= PASS TEST	PASS TEST
USP Grade - IGNITION RESIDUE	%	<= 0.01	<0.01
USP Grade - LIMIT OF RELATED IMPURITIES (TOTAL)	PASS/FAIL	= PASS TEST	PASS TEST
USP Grade - RESIDUAL SOLVENTS	PASS/FAIL	= PASS TEST	PASS TEST
USP Grade - SPECIFIC GRAVITY @ 25 C		>= 1.249	1.264
USP Grade - SULFATE (SO4)	ppm	<= 20	<20
USP Grade - WATER	%	<= 5.0	<5.0

Additional Information Glycerin does not contain potential allergens, including peanuts, milk, egg, wheat, gluten, or soybean. In addition, it does not contain melamine, phthalates or Bis-Phenol A. The glycerin is solely sourced from vegetable oils, which can include oil from GMO oilseeds. However, GMO genetic materials are not expected to be present in the refined glycerin made from the highly refined oils.



Harout Sahagian  
Manager, QC • Laboratory Products Group

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 use or further manufacturing. 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.

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