

## 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	A383
Lot Number	261008
Description	1-BUTANOL, HPLC GRADE
CAS Number	71-36-3
Quality Test/Release Date	16/Jun/2026
Suggested retest date	15/Jun/2031
Country of Origin	United States
Declaration of Origin	Organic - non animal
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 free of suspended matter
ASSAY	%	>= 99.4	99.99
BOILING POINT	DEGREES CELSIUS	Inclusive Between 117.6 - 117.8	117.6
BOILING POINT (INITIAL)	DEGREES CELSIUS	Inclusive Between 116.2 - 119.2	117.6
BOILING RANGE	DEGREES CELSIUS	<= 1.5	0.2
BOILING RANGE (DRY POINT)	DEGREES CELSIUS	Inclusive Between 116.2 - 119.2	117.8
BUTYL ETHER	%	<= 0.2	<0.2
CARBONYL COMPOUNDS	%	<= 0.01	<0.01
COLOR	APHA	<= 10	5
EVAPORATION RESIDUE	%	<= 0.005	<0.00005
FLUORESCENCE BACKGROUND IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
	PASS/FAIL	= PASS TEST	PASS TEST
OPTICAL ABS AT 215 NM	ABSORBANCE UNITS	<= 1.00	0.27
OPTICAL ABS AT 220 NM	ABSORBANCE UNITS	<= 0.50	0.16
OPTICAL ABS AT 230 NM	ABSORBANCE UNITS	<= 0.20	0.06
OPTICAL ABS AT 254 NM	ABSORBANCE UNITS	<= 0.025	0.005
REFRACTIVE INDEX @ 25 DEG C		Inclusive Between 1.3952 - 1.3992	1.3965
TITRATABLE ACID	MEQ/G	<= 0.0008	0.00006
WATER (H2O)	%	<= 0.1	0.002

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.



Ash Frey  
Supervisor, Quality Control

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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