

## 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	T291
Lot Number	261380
Description	TOLUENE - OPTIMA
CAS Number	108-88-3
Quality Test/Release Date	11/May/2026
Suggested retest date	10/May/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	%	$\geq 99.8$	$>99.99$
BENZENE	%	$\leq 0.05$	$<0.05$
COLOR	APHA	$\leq 10$	5
EVAPORATION RESIDUE	ppm	$\leq 1$	$<0.1$
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
OPTICAL ABS AT 285 NM	ABSORBANCE UNITS	$\leq 1$	0.49
OPTICAL ABS AT 300 NM	ABSORBANCE UNITS	$\leq 0.1$	0.03
OPTICAL ABS AT 325 NM	ABSORBANCE UNITS	$\leq 0.02$	0.01
OPTICAL ABS AT 350 NM	ABSORBANCE UNITS	$\leq 0.005$	0.001
PESTICIDE RESIDUE ANALYSIS	NG/L	$\leq 10$	$<1$
REFRACTIVE INDEX @ 25 DEG C		Inclusive Between 1.4930 - 1.4950	1.4942
SUBSTANCES DARKENED BY H2SO4	PASS/FAIL	= PASS TEST	PASS TEST
SULFUR COMPOUNDS	%	$\leq 0.003$	$<0.0001$
WATER (H2O)	%	$\leq 0.02$	0.003

Ash Frey  
Supervisor, Quality Control

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.

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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