

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	J22674
Lot Number	214746
Description	TRIS (OR TRIS (HYDROXYMETHYL) AMINOMETHANE
CAS Number	77-86-1
Quality Test/Release Date	07/Oct/2021
Suggested retest date	18/Aug/2026
Country of Origin	United States
Declaration of Origin	Organic - synthetic
BSE/TSE	The product is produced from chemicals that have no origin from animal sources. The raw materials for this product are produced from organic chemical syntheses. To the best of our knowledge, there should be no Bovine Spongiform Encephalopathy (BSE)/Transmissible Spongiform Encephalopathy (TSE) issues with this product because of the sources of raw materials.

Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	White/clear crystalline powder
ABSORBANCE 1M SOL AT 250NM		<= 0.1	<0.1
ABSORBANCE 40% W/W SOL @ 290NM		<= 0.2	<0.2
ASSAY	%	Inclusive Between 99.0 - 101.0	99.93
HEAVY METALS	ppm	<= 5	<1
IDENTIFICATION, I.R.	Matches Reference	= MATCHES REFERENCE	matches reference
INSOLUBLE MATTER	%	<= 0.005	<0.005
IRON (Fe)	ppm	<= 5	<1
LOSS ON DRYING	%	<= 1	<1
MELTING POINT	DEGREES	Inclusive Between 168 - 178	170.3
PH OF 5% SOLUTION		Inclusive Between 10.0 - 11.5	10.8
PKA AT 20 DEGREES C		Inclusive Between 8.15 - 8.45	8.20
RESIDUE ON IGNITION (SULFATED)	%	<= 0.1	<0.1



Harout Sahagian
QC Manager

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.

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.