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## Certificate of Analysis

Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by DNV Certificate number CERT-08052-2006-AQ-HOU-ANAB

This is to certify that units of the above mentioned lot number were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Certain products (USP/FCC/NF/EP/BP/JP grades) are sold for use in food, drug, or medical device manufacturing. Fisher does not claim regulatory coverage under 21 CFR nor maintain DMF's with the FDA. The following are the actual analytical results obtained:

<b>Catalog Number</b>	BP152	<b>Mfg. Date</b>	3/11/2011
<b>Lot Number</b>	110320		
<b>Description</b>	TRIS (HYDROXYMETHYL) AMINOMETHANE		
<b>Country of Origin</b>	United States	<b>Recommended Retest Date</b>	Mar-2016
<b>Chemical Origin</b>	Organic - non animal		
<b>BSE/TSE Comment</b>	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	Fine white crystals
ABSORBANCE AT 280NM	ABSORBANCE UNITS	<= 0.05	0.040
ARSENIC (As)	ppm	<= 5	<2.0
ASSAY	%	>= 99.8	100.0
COPPER (Cu)	ppm	<= 1	<1.0
DNASE	detected-n/detected	= NOT DETECTED	NOT DETECTED
ELECTROPHORESIS	PASS/FAIL	= PASS TEST	PASS TEST
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
IRON (Fe)	ppm	<= 2	<0.2
LEAD (Pb)	ppm	<= 1	<1.0
MAGNESIUM	ppm	<= 10	<2
PH OF .05M SOLUTION		Inclusive Between 10.3 10.5	10.4
PROTEASE	detected-n/detected	= NOT DETECTED	NOT DETECTED
RNASE	detected-n/detected	= NOT DETECTED	NOT DETECTED
WATER (H2O)	%	<= 2	0.1



*Edgar E. Hase*

Lab Manager Fairlawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as a extension of this catalog number listed above. If there are any questions with this certificate, please call Chemical Services at (800) 227-6701.