

# SECURE CHEMISTRY. SECURE SUPPLY. SECURE CONFIDENCE.



ANGUS is the world's only fully integrated manufacturer of TRIS AMINO™ buffers for use in a variety of demanding pharmaceutical and biotechnology applications. With more than 50 years of TRIS manufacturing experience, we continue providing TRIS AMINO grades that meet the dynamic needs – as well as the regulatory and performance requirements – of the global markets we serve.

TRIS AMINO PRODUCT			PACKAGE SIZE AND GMID						PROPERTIES AND SPECIFICATIONS					
GRADE*	COMPENDIA	cGMP	1 kg	5 kg	12 kg	25 kg	50 kg	50 lb	COUNTRY OF ORIGIN	CAS #	MOLECULAR WEIGHT (DALTON)	pH RANGE	MINIMUM PURITY BY TITRATION (%)	MINIMUM PURITY BY GC (%)
<b>Industrial Series</b>														
TRIS AMINO™ Crystals								144877	U.S.	77-86-1	121.14	10-11.5	99	N/A
TRIS AMINO™ AC Crystals								375962	Germany	77-86-1	121.14	10-11.5	99	N/A
<b>Buffer Series</b>														
TRIS AMINO™ Standard Buffer						273255			U.S.	77-86-1	121.14	10-11.5	99.3	N/A
TRIS AMINO™ Buffer ACS Grade			375893	375894		146914			U.S.	77-86-1	121.14	10-11.5	99.8	N/A
TRIS AMINO™ AC Buffer						375981			Germany	77-86-1	121.14	10-11.5	N/A	99.9
<b>Ultra Pure Series</b>														
TRIS AMINO™ Ultra Pure	USP/EP	X	375546	154032	201109	288737	151698		U.S.	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ Ultra Pure	USP/EP/JPC	X			11103466	279652	375624		U.S.	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ Ultra Pure	USP/EP/JPC/ChP	X			375547	375548			U.S.	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ Ultra Pure Biologics Grade <sup>1</sup>	USP/EP	X			375825	375824			U.S.	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ Molecular Biology Grade <sup>2</sup>	USP/EP	X	375897	375898					U.S.	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ AC Ultra Pure	USP/EP	X				375904			Germany	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ AC Ultra Pure	USP/EP/JPC	X				375905			Germany	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ AC Ultra Pure	USP/EP/JPC/ChP	X				375906			Germany	77-86-1	121.14	10-11.5	99.9	99.9
TRIS AMINO™ AC Ultra Pure Biologics Grade <sup>1</sup>	USP/EP	X				375907			Germany	77-86-1	121.14	10-11.5	99.9	99.9
<b>TRIS Derivatives Series</b>														
BIS-TRIS						146820			Mexico	6976-37-0	209.24	9.5-11.0	99	N/A
TRIS HCl Prime		X	375544	375545	375674	375435	375675		U.S.	1185-53-1	157.6	3.7-4.7	99.5	N/A
TRIS HCl Ultra Pure						146948			U.S.	1185-53-1	157.6	3.7-4.7	99	N/A
TRIS HCl Ultra Pure Molecular Biology Grade <sup>2</sup>			375895	375896		375844			U.S.	1185-53-1	157.6	3.7-4.7	99	N/A

\* All grades are GMO-free and BSE/TSE-free.

<sup>1</sup> Includes endotoxin and bioburden testing.

<sup>2</sup> Includes DNase, RNase and Protease testing.