

# TRIS AMINO<sup>®</sup>

## Selection Guide

**WE MAKE THE BEST PERFORM BETTER**

# SECURE CHEMISTRY. SECURE SUPPLY. SECURE CONFIDENCE.

ANGUS is the world's only fully integrated manufacturer of globally compliant TRIS AMINO® buffers for use in a variety of demanding pharmaceutical and biotechnology applications. With more than 50 years of Tromethamine 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					PROPERTIES					SPECIFICATIONS		APPLICATIONS															
GRADE	GMID	COMPENDIA	cGMP	FEATURES	COO	CAS #	MW	pH RANGE	BSE/TSE-FREE	GMO-FREE	ASSAY BY TITRATION	PURITY BY GC	INDUSTRIAL COATINGS	WATER TREATMENT	BIOCIDES	REPROCESSING	DIAGNOSTICS	R&D DNA EXTRACTION & PURIFICATION	R&D PROTEIN EXTRACTION & PURIFICATION	R&D ELECTROPHORESIS GEL SYSTEMS	THERAPEUTIC ANTIBODY PURIFICATION	BLOOD FRACTIONATION	THERAPEUTIC PROTEIN PURIFICATION	CELL CULTURE	FORMULATION	PERSONAL CARE/COSMETICS	
TRIS AMINO Crystals	144877				U.S.	77-86-1	121.14	10 -11.5	√	√	99.0% Min		√	√	√	√											
TRIS AMINO Buffer	273255				U.S.	77-86-1	121.14	10 -11.5	√	√	99.3% Min				√	√	√										
TRIS AMINO	146914	ACS	√	ACS pH specifications 10.3-10.5	U.S.	77-86-1	121.14	10.3-10.5	√	√	99.8 -100.1%	99.9% Min						√	√	√	√						
TRIS AMINO Ultra Pure	288737	USP/EP	√	High purity with lowest elemental impurities profile	U.S.	77-86-1	121.14	10 -11.5	√	√	99.9% Min	99.9% Min						√	√	√	√	√	√	√	√	√	√
TRIS AMINO Ultra Pure	279652	USP/EP/JP	√	High purity with lowest elemental impurities profile	U.S.	77-86-1	121.14	10 -11.5	√	√	99.9% Min	99.9% Min						√	√	√	√	√	√	√	√	√	√
TRIS AMINO Ultra Pure	375548	USP/EP/JP/ CP	√	High purity with lowest elemental impurities profile	U.S.	77-86-1	121.14	10 -11.5	√	√	99.9% Min	99.9% Min						√	√	√	√	√	√	√	√	√	√
TRIS AMINO HCl Prime	375435		√	High purity with lowest elemental impurities profile	U.S.	1185-53-1	157.6	4.2 – 5.0	√	√	99.5% Min							√	√	√	√	√	√	√			
BIS-TRIS	146820			High purity with lowest elemental impurities profile	Mexico	6976-37-0	209.24	5.8 – 7.2	√	√	99.0% Min							√	√	√	√	√			√		
TRIS AMINO ULTRA PC	248560		√	Globally compliant for personal care and cosmetics products	U.S.	77-86-1	121.1	10 – 11.5	√	√	99.0% Min															√	

## Dedicated to What Matters

ANGUS Life Sciences, a business of the ANGUS Chemical Company, provides dedicated support for biotechnology and pharmaceutical applications. Through specialized testing and custom blending and packaging solutions, ANGUS Life Sciences helps shape successful product launches and achieve faster time-to-market, while building in optimized cost effectiveness and efficiency.

### Packaging

- cGMP IPEC-PQG
- Custom packaging – 10g to >500kg
- Multiple container options and custom labeling

### Warehousing

- GDP IPEC-PQG
- Pre-shipment sampling
- Same-day shipment

### Analytical

- cGMP IPEC-PQG
- ISO 9001:2008 certified
- Biological testing

### Purchasing

- Formalized qualification process
- Supplier rating and audit program
- Non-animal origin

# ANGUS produces chemistries the right way— empowering customers to do business the best way.

The ammonia/air synthetic process used by ANGUS to produce Tris not only reduces the use of highly toxic compounds, but it also avoids the potential incorporation of toxic impurities associated with nitromethane produced by other manufacturers. This unique process allows ANGUS to not only produce a pharmaceutical grade nitromethane, but also control the manufacture of all key intermediates by producing them in-house at our Sterlington, Louisiana, USA, and Ibbenbüren, Germany, facilities to provide clear line of sight back to base materials.

## Tightly Controlled Manufacturing Ensures Quality and Performance

ANGUS' manufacturing facilities in Sterlington and Ibbenbüren, as well as our ANGUS Life Sciences warehouse and packaging facility in Niagara Falls, New York, USA, are cGMP-compliant and certified to ISO 9001:2008 quality management system standards.



## Product Stewardship

ANGUS encourages its customers to review their applications of ANGUS products from the standpoint of human health and environmental quality. To help ensure that ANGUS products are not used in ways for which they are not intended, ANGUS personnel will assist customers in dealing with environmental and product safety considerations. For assistance, product Safety Data Sheets, or other information, please contact your ANGUS representative at the numbers provided in this document.



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