



**Aqua Solutions, Inc.**  
**6913 Highway 225**  
**Deer Park, TX, 77536**  
**281/479-2569**  
**Certificate of Analysis / QC Results**  
**Customer PO # :**

<b>Packaged Product:</b> 4191			
HYDROCHLORIC ACID 0.5 NORMAL IN IPA			
Test	Target/UOM	Range	Result
<b>PREPARED TO FORMULATION ON FILE</b>	YES		YES
Sample ID	YES		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>SAMPLE COLLECTION &amp; HANDLING PER LAB040</b>	YES		YES
Sample ID	YES		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>DATE OF SAMPLING FOR TEST PURPOSES</b>	MM/DD/YYYY		03/27/2024
Sample ID	MM/DD/YYYY		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>AMBIENT TEMPERATURE DURING SAMPLING DEGC</b>	25.0	10.0 - 35.0	20.0
Sample ID	DEG C		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>DATE OF TESTING OF SAMPLE</b>	MM/DD/YYYY		03/27/2024
Sample ID	MM/DD/YYYY		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>AMBIENT TEST TEMPERATURE DEG C</b>	20.0	15.0 - 30.0	20.0
Sample ID	DEG C		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>N.I.S.T. Traceable to SRM 723</b>	YES		YES
Sample ID	YES		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			
<b>QCSP5: STANDARDIZATION OF AQUEOUS ACIDS</b>	YES		YES
Sample ID	METHOD		
Tested 03/27/24			
Tester AFRE			
Recorded 03/27/24			



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<b>Actual Normality</b>	0.5000 EQ/L	0.4995 - 0.5005	0.4997
Sample ID			
Tested	03/27/24		
Tester	AFRE		
Recorded	03/27/24		
<b>APPEARANCE AND COLOR</b>	CLEAR LIQUID APPEARANCE		PASS
Sample ID			
Tested	03/27/24		
Tester	AFRE		
Recorded	03/27/24		
<b>INSTRUMENTS USED DURING PREPARATION</b>	INSTRUMENT		M87, T262
Sample ID			
Tested	03/27/24		
Tester	AFRE		
Recorded	03/27/24		
<b>Actual Density</b>	0.81013 GM/ML	0.80934 - 0.81092	0.80980
Sample ID			
Tested	03/27/24		
Tester	AFRE		
Recorded	03/27/24		
<b>EXPIRATION DATE</b>	MM/DD/YY MM/DD/YYYY		03/30/25
Sample ID			
Tested	03/27/24		
Tester	AFRE		
Recorded	03/27/24		
<b>Lot #</b>	4032529		
<b>Made</b>	03/27/24		

This is to certify that the product listed above has been prepared according to the agreed upon formulation. The solutions producer has a Quality Management System which governs each step of the manufacturing process to insure the production of a consistent product. Traceability from the producer's lot numbers to the original manufacturer's lot number is maintained. Certificates of Analysis for the raw materials used to prepare this product are available upon request.

The weights and/or volumes used to prepare this product are N.I.S.T. Traceable. All balances used in the preparation of product are calibrated daily against N.I.S.T. Traceable weights. The balances are maintained and serviced on a regular basis by an outside certified company. All volumetric glassware used is N.I.S.T. Traceable and certified as meeting Class A specifications.

Unless otherwise agreed to, all chemicals used in the preparation of this product are Reagent ACS grade.

**Quality Manager**