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Cover Page

Order ID : P1747

Project ID : Walter Gladwin Recreation Center, Bronx, NY

Client : LiRo Engineers, Inc.

Lab Sample Number	Client Sample Number
P1747-01	MW-01
P1747-02	MW-01-DUP
P1747-03	MW-01
P1747-04	MW-02
P1747-05	MW-04
P1747-06	TRIP-BLANK
P1747-07	MW-01
P1747-08	MW-01-DUP
P1747-09	MW-02
P1747-10	MW-04

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 3/18/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: P1747

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: MAYUR DESAI **Date:** 03/18/2024

2nd Level QA Review Signature: _____ **Date:** _____

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LAB CHRONICLE

OrderID:	P1747	**OrderDate:**	3/13/2024 12:28:00 PM
Client:	LiRo Engineers, Inc.	**Project:**	Walter Gladwin Recreation Center, Bronx, NY
Contact:	Steve Frank	**Location:**	I21,I31,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P1747-03	**MW-01**	**WATER**			**03/13/24 10:00**			**03/13/24**
			CBOD5	SM5210 B			03/14/24 10:30	
			Chloride	SM4500-CL C			03/14/24 15:22	
			Flash Point	1010B			03/14/24 13:15	
			Hexavalent Chromium	SM3500-Cr B			03/14/24 11:14	
			Non-Polar Material	1664A			03/15/24 15:00	
			Phenolics	420.1		03/15/24	03/15/24 14:29	
			TKN	SM4500-N Org C-11 plus NH3 B plus G-11		03/18/24	03/19/24 11:26	
			Total Nitrogen	Cal			03/18/24 00:00	
			TS	SM2540 B			03/14/24 11:00	
			TSS	SM2540 D			03/18/24 09:30	

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SAMPLE DATA

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Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	03/13/24 10:00
Project:	Walter Gladwin Recreation Center, Bronx, NY	Date Received:	03/13/24
Client Sample ID:	MW-01	SDG No.:	P1747
Lab Sample ID:	P1747-03	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
CBOD5	19.0		1	0.17	2.00	mg/L		03/14/24 10:30	SM 5210 B-16
Chloride	61.2		1	0.54	5.00	mg/L		03/14/24 15:22	SM 4500-Cl C-11
Flash Point	>212		1	0	0	o F		03/14/24 13:15	1010B
Dissolved Hexavalent Chromium	0.010	U	1	0.0020	0.010	mg/L		03/14/24 11:14	SM 3500-Cr B-11
Non-Polar Material	5.00	U	1	0.53	5.00	mg/L		03/15/24 15:00	1664A
Phenolics	0.050	U	1	0.012	0.050	mg/L	03/15/24 11:30	03/15/24 14:29	420.1
TKN	1.00		1	0.13	0.50	mg/L	03/18/24 12:40	03/19/24 11:26	SM4500-N Org C-11 plus NH3 B plus G-11
Nitrogen	1.04		1	0.15	0.60	mg/L		03/18/24 00:00	SM 4500-N Org C-11 plus NH3 B plus G-11
TS	576		1	1.00	5.00	mg/L		03/14/24 11:00	SM 2540 B-15
TSS	57.2		1	1.00	4.00	mg/L		03/18/24 09:30	SM 2540 D-15

Comments: Other method reference for flash point : Pensky-Martens Closed Cup Flash Point ASTM D 93 - IP 34

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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QC RESULT SUMMARY

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Initial and Continuing Calibration Verification

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129879

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV						
Flash Point	o F	81.7	81	101	78-84	03/14/2024

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Initial and Continuing Calibration Verification

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129881

Analyte	Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID: ICV						
Hexavalent Chromium	mg/L	0.502	0.5	100	95-105	03/14/2024
Sample ID: CCV1						
Hexavalent Chromium	mg/L	0.500	0.5	100	90-110	03/14/2024
Sample ID: CCV2						
Hexavalent Chromium	mg/L	0.502	0.5	100	90-110	03/14/2024

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Initial and Continuing Calibration Verification

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129910

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV1						
Phenolics		mg/L	0.97	1	97	90-110	03/15/2024
Sample ID:	CCV1						
Phenolics		mg/L	0.98	1	98	90-110	03/15/2024
Sample ID:	CCV2						
Phenolics		mg/L	1	1	100	90-110	03/15/2024

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Initial and Continuing Calibration Verification

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129942

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV1						
TKN		mg/L	4.8	5	96	90-110	03/19/2024
Sample ID:	CCV1						
TKN		mg/L	4.8	5	96	90-110	03/19/2024
Sample ID:	CCV2						
TKN		mg/L	4.9	5	98	90-110	03/19/2024
Sample ID:	CCV3						
TKN		mg/L	5	5	100	90-110	03/19/2024

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Initial and Continuing Calibration Blank Summary

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129881

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB							
Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0021	0.01	03/14/2024
Sample ID: CCB1							
Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0021	0.01	03/14/2024
Sample ID: CCB2							
Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0021	0.01	03/14/2024

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Initial and Continuing Calibration Blank Summary

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129910

Analyte		Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID:	ICB1							
Phenolics		mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024
Sample ID:	CCB1							
Phenolics		mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024
Sample ID:	CCB2							
Phenolics		mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024

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Initial and Continuing Calibration Blank Summary

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **RunNo.:** LB129942

Analyte		Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID:	ICB1							
TKN		mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID:	CCB1							
TKN		mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID:	CCB2							
TKN		mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID:	CCB3							
TKN		mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024

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Preparation Blank Summary

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: LB129875BL							
CBOD5	mg/L	< 0.2000	0.2000	U	0.17	2.0	03/14/2024
Sample ID: LB129881BL							
Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.002	0.01	03/14/2024
Sample ID: LB129888BL							
TS	mg/L	1	2.5000	J	1	5	03/14/2024
Sample ID: LB129890BL							
Chloride	mg/L	< 2.5000	2.5000	U	0.54	5.0	03/14/2024
Sample ID: LB129904BL							
Non-Polar Material	mg/L	< 2.5000	2.5000	U	0.53	5.0	03/15/2024
Sample ID: LB129917BL							
TSS	mg/L	1	2.0000	J	1	4	03/18/2024
Sample ID: PB159614BL							
TKN	mg/L	< 0.2500	0.2500	U	0.13	0.5	03/19/2024
Sample ID: PB159616BL							
Phenolics	mg/L	< 0.0250	0.0250	U	0.012	0.05	03/15/2024

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Matrix Spike Summary

Client: LiRo Engineers, Inc.
SDG No.: P1747
Project: Walter Gladwin Recreation Center, Bronx, NY
Sample ID: P1747-03
Client ID: MW-01MS
Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Chloride	mg/L	90-110	108		61.2		50.0	1	94		03/14/2024
Hexavalent Chromium	mg/L	90-111	0.95		0.0020	U	1.0	2	95		03/14/2024
TKN	mg/L	75-125	5.90		1.00		5	1	98		03/19/2024
Phenolics	mg/L	75-125	0.99		0.012	U	1	1	99		03/15/2024

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Matrix Spike Summary

Client: LiRo Engineers, Inc.
SDG No.: P1747
Project: Walter Gladwin Recreation Center, Bronx, NY
Sample ID: P1747-03
Client ID: MW-01MSD
Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Chloride	mg/L	90-110	108		61.2		50.0	1	94		03/14/2024
Hexavalent Chromium	mg/L	90-111	0.97		0.0020	U	1.0	2	97		03/14/2024
TKN	mg/L	75-125	5.90		1.00		5	1	98		03/19/2024
Phenolics	mg/L	75-125	0.98		0.012	U	1	1	98		03/15/2024

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Duplicate Sample Summary

Client: LiRo Engineers, Inc.
SDG No.: P1747
Project: Walter Gladwin Recreation Center, Bronx, NY
Sample ID: LB129904BS
Client ID: LB129904BSD
Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Non-Polar Material	mg/L	+/-18	16.7		17.0		1	1.78		03/15/2024

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Duplicate Sample Summary

Client: LiRo Engineers, Inc.
SDG No.: P1747
Project: Walter Gladwin Recreation Center, Bronx, NY
Sample ID: P1747-03
Client ID: MW-01DUP
Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
CBOD5	mg/L	+/-20	19.0		18.8		1	0.85		03/14/2024
Flash Point	o F	+/-2	>212.0		>212.0		1	0		03/14/2024
Hexavalent Chromium	mg/L	+/-20	0.0020	U	0.0020	U	1	0		03/14/2024
TS	mg/L	+/-5	576		551		1	4.44		03/14/2024
Chloride	mg/L	+/-20	61.2		61.0		1	0.33		03/14/2024
Phenolics	mg/L	+/-20	0.012	U	0.012	U	1	0		03/15/2024
TSS	mg/L	+/-5	57.2		56.9		1	0.53		03/18/2024
TKN	mg/L	+/-20	1.00		1.00		1	0		03/19/2024

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Duplicate Sample Summary

Client: LiRo Engineers, Inc.
SDG No.: P1747
Project: Walter Gladwin Recreation Center, Bronx, NY
Sample ID: P1747-03
Client ID: MW-01MSD
Percent Solids for Spike Sample: 0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/ AD	Qual	Analysis Date
Hexavalent Chromium	mg/L	+/-20	0.95		0.97		2	2.71		03/14/2024
Chloride	mg/L	+/-20	108		108		1	0		03/14/2024
Phenolics	mg/L	+/-20	0.99		0.98		1	1		03/15/2024
TKN	mg/L	+/-20	5.90		5.90		1	0		03/19/2024

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Laboratory Control Sample Summary

Client:	LiRo Engineers, Inc.	**SDG No.:**	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	**Run No.:**	LB129875

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID **LB129875BS**								
CBOD5	**mg/L**	**198**	**175**		**88**	**1**	**84.6-115.4**	**03/14/2024**

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Laboratory Control Sample Summary

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **Run No.:** LB129881

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID LB129881BS								
Hexavalent Chromium	mg/L	0.5	0.51		103	1	90-111	03/14/2024

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Laboratory Control Sample Summary

Client:	LiRo Engineers, Inc.	**SDG No.:**	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	**Run No.:**	LB129890

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID **LB129890BS**								
Chloride	**mg/L**	**50**	**47.0**		**94**	**1**	**90-110**	**03/14/2024**

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Laboratory Control Sample Summary

Client:	LiRo Engineers, Inc.	**SDG No.:**	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	**Run No.:**	LB129904

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID LB129904BS								
Non-Polar Material	**mg/L**	**20.0**	**16.7**		**84**	**1**	**78-114**	**03/15/2024**

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Laboratory Control Sample Summary

Client: LiRo Engineers, Inc. **SDG No.:** P1747

Project: Walter Gladwin Recreation Center, Bronx, NY **Run No.:** LB129904

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID LB129904BSD								
Non-Polar Material	mg/L	20.0	17.0		85	1	78-114	03/15/2024

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Laboratory Control Sample Summary

Client:	LiRo Engineers, Inc.	**SDG No.:**	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	**Run No.:**	LB129917

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID **LB129917BS**								
TSS	**mg/L**	**550**	**531**		**96**	**1**	**90-110**	**03/18/2024**

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Laboratory Control Sample Summary

Client:	LiRo Engineers, Inc.	**SDG No.:**	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	**Run No.:**	LB129942

Analyte		Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	**PB159614BS**								
TKN		**mg/L**	**5**	**4.80**		**96**	**1**	**90-110**	**03/19/2024**

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Laboratory Control Sample Summary

Client:	LiRo Engineers, Inc.	**SDG No.:**	P1747
Project:	Walter Gladwin Recreation Center, Bronx, NY	**Run No.:**	LB129910

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID **PB159616BS**								
Phenolics	**mg/L**	**1**	**0.97**		**97**	**1**	**80-120**	**03/15/2024**

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RAW DATA

Reviewed By:Iwona
On:3/19/2024 2:00:09 PM
Inst Id :DO METER
LB :LB129875

CHEMTECH

CBOD5 LOG

ANALYST: jigne
SUPERVISOR: Iwona

QC BATCH ID: LB129875
Analysis Date: 03/14/2024
BOD Water: WP106941
MANGANOUS SULFATE SOLUTION: W2913
Starch: W2977
Alkaline Iodide Azide: W2914
Sulfuric acid, 1N: WP105744
Sodium Thiosulfate, 0.025N: W2976
POLYSEED: WP106943
NaOH, 1N: WP106529
GGA: WP106942
IncubatorID: INCUBATOR #3
Chlorine Strips: W2965
GuageID: 0511064
pH Strips: W3056
Zero DO: WP106592
Nitrification Inhibitor: W3064

Lab SampleID	Client ID	Bottle No.	VOL. ML	Initial Reading(ML)	Final Reading(ML)	Difference	Average
WINKLER 1	WINKLER 1	1	300	0.0	8.7	8.7	8.7
WINKLER 2	WINKLER 2	2	300	8.7	17.4	8.7	8.7

Meter Calibration1: 8.71 Zero DO Reading1: 0.14 mg/L (<=0.2 Criteria)

Barometric Pressure1: 771 mmHg DO Meter BOD fluid reading for winkler comparison: 8.78

After Incubation

Meter Calibration2: 8.80 Zero DO Reading2: 0.09 mg/L (<=0.2 Criteria)

Barometric Pressure2: 765 mmHg

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QC BATCH ID: LB129875

INCUBATOR TEMP IN(C): 20.5

INCUBATOR TEMP OUT(C): 20.4

TIME IN: 10:30

TIME OUT: 11:30

DATE IN: 03/14/2024

DATE OUT: 03/19/2024

Lab SampleID	Bottle No.	Check CL	Initial PH	Final PH	Temp °C	Sam Vol. (mL)	D.O.1 Initial	D.O.2 Final	Depletion	BOD Result (mg/L)	Avg Result (mg/L)	Comment
LB129875BL	1	No	6.57	N/A	20.50	300	8.77	8.76	0.01	0.01	0.01	
POLYSEED	1					10	8.64	5.99	2.65	0.53	0.42	
POLYSEED	2					15	8.62	5.81	2.81	0.37		
POLYSEED	3					20	8.60	5.03	3.57	0.36		
GGA	1					6	8.68	4.82	3.86	172	175	
GGA	2					6	8.61	4.70	3.91	174.5		
GGA	3					6	8.59	4.60	3.99	178.5		
P1747-03	1	No	6.42	6.72	20.00	5	8.66	8.20	-	0	18.96	pH Adjuste
P1747-03	2					20	8.55	5.71	2.84	36.3		
P1747-03	3					50	8.54	5.60	2.94	15.12		
P1747-03	4					150	8.51	5.36	3.15	5.46		
P1747-03DUP	1	No	6.42	6.72	20.00	5	8.64	8.22	-	0	18.8	pH Adjuste
P1747-03DUP	2					20	8.57	5.74	2.83	36.15		
P1747-03DUP	3					50	8.54	5.64	2.9	14.88		
P1747-03DUP	4					150	8.50	5.39	3.11	5.38		

NOTE: 2ml POLYSEED added to GGA and all the Samples, but not in Blank.
NOTE: 0.16 g Nitrification Inhibitor added to GGA and all the Samples, but not in Blank.

WORKLIST(Hardcopy Internal Chain)

LB129875

WorkList Name : cbod-314 **WorkList ID :** 178579 **Department :** Wet-Chemistry **Date :** 03-14-2024 08:35:52

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1747-03	MW-01	Water	CBOD5	Cool 4 deg C	LIRO01	I31	03/13/2024	SM5210 B

Date/Time 03/14/2024 08:30
Raw Sample Received by: RM (WC)
Raw Sample Relinquished by: [illegible] (COC)

Date/Time 03/14/2024 10:30
Raw Sample Received by: [illegible]
Raw Sample Relinquished by: RM (WC)

CHEMTECH

Analytical Summary Report

Analysis Method: 1010B
Parameter: Flash Point
Run Number: LB129879
Thermometer ID: Flashpoint

Reviewed By: Nikita
Supervisor Review By: Iwona
Ambient Barometric Pressure(mmHg): 771.00
Barometric Scale ID: 0511064

Reagent/Standard	Lot/Log #
p-xylene (ICV)	W3080

Seq	LabID	True Value °F	DL	Initial Sample °C	Celsius °C	Result °F	Final Result °F	Anal Date	Anal Time
1	ICV	81	1	8	28.00	82.4	81.7	03/14/2024	12:45
2	P1747-03		1	13	100.00	>212.0	>212.0	03/14/2024	13:15
3	P1747-03DUP		1	12	100.00	>212.0	>212.0	03/14/2024	13:45

Result = (Celsius * 1.8) + 32

Final Result = Result + (760 - Ambient Barometric Pressure) * 0.06

LB. 129879

WORKLIST(Hardcopy Internal Chain)

WorkList Name : 03/14/24 flashpoint **WorkList ID :** 178584 **Department :** Wet-Chemistry **Date :** 03-14-2024 11:12:29

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1747-03	MW-01	Water	Flash Point	Cool 4 deg C	LIRO01	I31	03/13/2024	1010B

Date/Time 02/14/2024 12:30
Raw Sample Received by: N.P. W.C
Raw Sample Relinquished by: DCM

Date/Time 02/14/2024 14:5
Raw Sample Received by: DCM
Raw Sample Relinquished by: N.P. W.C

Reviewed By:Iwona
On:3/14/2024 2:11:21 PM
Inst Id :SPECTROPHOTOME

CHEMTECH

Analytical Summary Report

Analysis Method: SM3500-Cr B
ANALYST: Rubina
Parameter: Hexavalent Chromium
SUPERVISOR REVIEW BY: Iwona
Run Number: LB129881
pH Meter ID: WC pH Meter-1

Reagent/Standard	Lot/Log #
Calibration Std. hexchrome 0.1 ppm	WP106949
Calibration Std. hexchrome 0.05 ppm	WP106948
calibration std. hexchrome 0.01 ppm	WP106946
calibration std. hexchrome 0 ppm	WP106945
hexavalent chromium color reagent	WP106884
0.2N SULFURIC ACID	WP106542
Calibration Std Hexachrome 0.025 ppm	WP106947
Hexavalent Chromium ICV-LCS Std	WP106952
Calibration and CCV std HexChrome 0.5PPM	WP106950
Calibration std HexChrome 1.0PPM	WP106951

Intercept: 0 **Slope:** 0.7804 **Regression:** 0.999996

Seq	Lab ID	True Value (mg/l)	DF	Initial Vol (ml)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at 540nm		Absorbance Difference	Result (mg/L)	%D	Anal Date	Anal Time
								Backgrnd	Color					
1	CAL1	0	1	100	100		1.77	0.000	0.000	0.000	0		03/14/2024	11:00
2	CAL2	0.01	1	100	100		1.88	0.000	0.009	0.009	0.011	10	03/14/2024	11:01
3	CAL3	0.025	1	100	100		1.86	0.000	0.018	0.018	0.023	-8	03/14/2024	11:02
4	CAL4	0.05	1	100	100		1.84	0.000	0.039	0.039	0.049	-2	03/14/2024	11:03
5	CAL5	0.1	1	100	100		1.88	0.000	0.078	0.078	0.099	-1	03/14/2024	11:04
6	CAL6	0.5	1	100	100		1.86	0.000	0.391	0.391	0.501	0.2	03/14/2024	11:05
7	CAL7	1	1	100	100		1.87	0.000	0.780	0.780	0.999	-0.1	03/14/2024	11:06

CHEMTECH

Analytical Summary Report

Analysis Method: SM3500-Cr B

ANALYST: Rubina

Parameter: Hexavalent Chromium

SUPERVISOR REVIEW BY: Iwona

Run Number: LB129881

pH Meter ID: WC pH Meter-1

Seq	Lab ID	True Value	DF	Initial Vol (ml/gm)	Final Vol (ml)	pH HN03	pH H2SO4	Absorb.at540nm		Absorbance Difference	Intermediate Result (mg/L)	Anal Date	Anal Time
								Backgrnd	Color				
1	ICV	0.5	1	100	100		1.93	0.000	0.392	0.392	0.502	03/14/2024	11:07
2	ICB		1	100	100		1.76	0.000	0.000	0.000	0.000	03/14/2024	11:08
3	CCV1	0.5	1	100	100		1.95	0.000	0.390	0.390	0.500	03/14/2024	11:09
4	CCB1		1	100	100		1.78	0.000	0.000	0.000	0.000	03/14/2024	11:10
5	RL Check	0.01	1	100	100		1.92	0.000	0.009	0.009	0.012	03/14/2024	11:11
6	LB129881BL		1	100	100		1.75	0.000	0.000	0.000	0.000	03/14/2024	11:12
7	LB129881BS	0.5	1	100	100		1.92	0.000	0.401	0.401	0.514	03/14/2024	11:13
8	P1747-03		1	100	100		2.08	0.000	0.000	0.000	0.000	03/14/2024	11:14
9	P1747-03DU		1	100	100		2.06	0.000	0.000	0.000	0.000	03/14/2024	11:15
10	P1747-03MS	1	2	100	100		2.10	0.000	0.369	0.369	0.473	03/14/2024	11:16
11	P1747-03MS	1	2	100	100		2.08	0.000	0.379	0.379	0.486	03/14/2024	11:17
12	CCV2	0.5	1	100	100		1.93	0.000	0.392	0.392	0.502	03/14/2024	11:18
13	CCB2		1	100	100		1.74	0.000	0.000	0.000	0.000	03/14/2024	11:19

WORKLIST(Hardcopy Internal Chain)

Lb129881

WorkList Name : HEX-313 **WorkList ID :** 178559 **Department :** Wet-Chemistry **Date :** 03-13-2024 14:47:19

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1747-03	MW-01	Water	Hexavalent Chromium	Ammonium sulfate buffer	LIRO01	I31	03/13/2024	SM3500-Cr B

Date/Time 03/13/2024 16.45
Raw Sample Received by: RM CWC
Raw Sample Relinquished by: JD (CCC)

Date/Time 03/13/2024 17-00
Raw Sample Received by: JD (CCC)
Raw Sample Relinquished by: RM CWC

CHEMTECH

TOTAL SOLIDS - SM2540B

SUPERVISOR: Iwona
ANALYST: jignesh
Date: 03/14/2024
Run Number: LB129888
BalanceID: WC SC-4
OvenID: WC OVEN-1
ThermometerID: WET OVEN#1

TEMP1 IN:	103 °C	03/14/2024 11:00	**TEMP1 OUT:**	103 °C	03/14/2024 12:00
TEMP2 IN:	104 °C	03/14/2024 12:30	**TEMP2 OUT:**	104 °C	03/14/2024 13:30
TEMP3 IN:	103 °C	03/14/2024 16:00	**TEMP3 OUT:**	103 °C	03/15/2024 07:30
TEMP4 IN:	104 °C	03/15/2024 08:00	**TEMP4 OUT:**	104 °C	03/15/2024 09:30

Dish #	Lab ID	Client ID	Empty Dish Weight (g)	Final Empty Dish Weight (g)	Sample Vol (ml)	Orignal weight 1st Dish+Sample weight after Drying @103-@105°C (g)	Constant weight 2nd Dish+Sample weight after Drying @103-@105°C (g)	Final Constant weight Final Dish+Sample weight after Drying @103-@105°C (g)	Weight (g)	Result (mg/L)
1	LB129888BL	LB129888BL	85.6964	85.6964	100	85.6965	85.6965	85.6965	0.0001	1
2	P1747-03	MW-01	88.9196	88.9196	100	88.9772	88.9772	88.9772	0.0576	576
3	P1747-03DUP	MW-01DUP	98.4775	98.4775	100	98.5326	98.5326	98.5326	0.0551	551

A = Sample Volume (ml)
B = Final Empty Dish Weight (g)
C = Final Dish+Sample weight after Drying @103-@105°C (g)

Result mg/L = ((C - B) / A) * 1000 * 1000

LB 129888

WORKLIST(Hardcopy Internal Chain)

WorkList Name : ts water p1047 **WorkList ID :** 178596 **Department :** Wet-Chemistry **Date :** 03-14-2024 14:21:17

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1747-03 I	MW-01	Water	TS	Cool 4 deg C	LIRO01	I31	03/13/2024	SM2540 B

Date/Time 03/14/24 14:30
Raw Sample Received by: JDLWC
Raw Sample Relinquished by: JT(SM)

Date/Time 03/14/24 16:30
Raw Sample Received by: JT(SM)
Raw Sample Relinquished by: JD LWC

Reviewed By:Iwona
On:3/14/2024 4:06:24 PM
Inst Id :Titrametric
LB :LB129890

CHEMTECH

Analytical Summary Report

Analysis Method: SM4500-CL C
ANALYST: Rubina
Parameter: Chloride
SUPERVISOR REVIEW BY: Iwona
Run Number: LB129890
Constant: 35450
Normality1: 0.0141

Reagent/Standard	Lot/Log #
Indicator-acidifier reagent - Chloride	WP106963
Chloride Blank	WP105287
Chloride LCS std - 50ppm	WP106962
MERCURIC NITRATE, 0.0141 N 4L	W3075

Seq	Lab ID	True Value (mg/L)	Dilution	Sample Volume (mL)	Titrant Initial (ml)	Titrant Final (ml)	Titrant Diff. (ml)	Result (mg/L)	Anal Date	Anal Time
1	LB129890BL		1	50	0.00	0.03	0.03	0.00	03/14/2024	15:15
2	LB129890BS	50	1	20	0.00	1.91	1.91	46.99	03/14/2024	15:18
3	P1747-03		1	20	0.00	2.48	2.48	61.23	03/14/2024	15:22
4	P1747-03DUP		1	20	0.00	2.47	2.47	60.98	03/14/2024	15:25
5	P1747-03MS	50	1	20	0.00	4.36	4.36	108.22	03/14/2024	15:28
6	P1747-03MSD	50	1	20	0.00	4.35	4.35	107.97	03/14/2024	15:31

Titrant Diff = TitrantFinal - TitrantInitial

Result = (Titrant Diff - Row Blank Value * Normality)) * Constant / Sa

WORKLIST(Hardcopy Internal Chain)

LB 129890

WorkList Name : Chloride-031424 **WorkList ID :** 178576 **Department :** Wet-Chemistry **Date :** 03-14-2024 10:14:14

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1747-03	MW-01	Water	Chloride	Cool 4 deg C	LIRO01	I31	03/13/2024	SM4500-CL C

Date/Time 03/14/24 14:50
Raw Sample Received by: 12(UC)
Raw Sample Relinquished by: TR(DC)

Date/Time 03/14/24 15:50
Raw Sample Received by: TR(DC)
Raw Sample Relinquished by: 12(DC)

CHEMTECH

Extraction and Analytical Summary Report

Analysis Method: 1664A
Test: Non-Polar Material
Run Number: LB129904
Analysis Date: 03/15/2024
BalanceID: WC SC-6
OvenID: EXT OVEN-3

ANALYST: jignesh
REVIEWED BY: Iwona
Extraction Date: 03/15/2024
Extration IN Time: 13:50
Extration OUT Time: 14:20
Thermometer ID: EXT OVEN#3

Dish #	Lab ID	Client ID	Matrix	pH	Sample Vol (ml)	Final Volume (ml)	Empty Dish Weight (g)	Final Empty Dish Weight(g)	Silica Gel Weight(g)	Weight After Drying(g)	Final Weight After Drying(g)	Change Weight (g)	Result in ppm
1	LB129904BL	LB129904BL	WATER	1.3	1000	100	3.0142	3.0142	3.02	3.0143	3.0143	0.0001	0.1
2	LB129904BS	LB129904BS	WATER	1.3	1000	100	2.8563	2.8563	3.01	2.8730	2.8730	0.0167	16.7
3	LB129904BSD	LB129904BSD	WATER	1.3	1000	100	2.9988	2.9988	3.03	3.0158	3.0158	0.0170	17
4	P1747-03	MW-01	WATER	1.3	1000	100	3.0654	3.0654	3.04	3.0656	3.0656	0.0002	0.2

CHEMTECH

QC Batch# LB129904 **Test:** Non-Polar Material **Analysis Date:** 03/15/2024

Chemicals Used:

Chemical Name	Chemical Lot #
HEXANE	W3076
pH Paper 0-14	M4909
Sodium Sulfate	EP2458
1:1 HCL	WP106917
Silica Gel	W2839
Sand	NA

Standards Used:

Standard Name	Amount Used	Standard Lot #
LCSW	5.00 ML	WP105918
LCSWD	5.00 ML	WP105919
MS/MSD	NA	NA

BALANCE CALIBRATION / OVEN Dessicator Data

Analytical Balance ID # : WC SC-6

Before Analysis

0.0020 gram Balance: 0.0018 **(0.0018-0.0022)**
1.0000 gram Balance: 1.0005 **(0.9950-1.0050)**
Bal Check Time: 14:00

In OVEN TEMP1 : 70 °C **Dessicator Time In1 :** 15:41
In Time1: 15:00
Out OVEN TEMP1: 70 °C **Dessicator Time Out1:** 16:25
Out Time1: 15:40

After Analysis

0.0020 gram Balance: 0.0019 **(0.0018-0.0022)**
1.0000 gram Balance: 1.0004 **(0.9950-1.0050)**
Bal Check Time: 18:01

In OVEN TEMP2 : 71 °C **Dessicator Time In2 :** 17:31
In Time2: 17:00
Out OVEN TEMP2: 71 °C **Dessicator Time Out2:** 18:00
Out Time2: 17:30

WORKLIST(Hardcopy Internal Chain)

LB 129904

WorkList Name : NON POLAR P1747 **WorkList ID :** 178633 **Department :** Wet-Chemistry **Date :** 03-15-2024 13:37:46

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1747-03 K	MW-01	Water	Non-Polar Material	Conc H2SO4 to pH < 2	LIRO01	I31	03/13/2024	1664A

Date/Time 03/15/24 13:45

Raw Sample Received by: JD (WC)

Raw Sample Relinquished by: 12 (JC)

Date/Time 03/15/24 17:0

Raw Sample Received by: 12 (JC)

Raw Sample Relinquished by: JD (WC)

LB129

Test results | Aquakem 7.2AQ1 | Page:

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : RM | Instrument ID : Konelab

3/15/2024 14:32

Test: Phenolics-

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	0.968	0.0	0.103	
ICB1	-0.004	0.0	0.006	
CCV1	0.985	0.0	0.104	
CCB1	-0.004	0.0	0.006	
PB159616BL	-0.007	0.0	0.006	
PB159616BS	0.967	0.0	0.103	
IDOC-1	0.974	0.0	0.103	
IDOC-2	0.963	0.0	0.102	
IDOC-3	0.963	0.0	0.102	
IDOC-4	0.970	0.0	0.103	
P1747-03	-0.003	0.0	0.006	
P1747-03DUP	-0.001	0.0	0.006	
P1747-03MS	0.988	0.0	0.105	
P1747-03MSD	0.982	0.0	0.104	
CCV2	0.999	0.0	0.106	
CCB2	-0.003	0.0	0.006	

N	16
Mean	0.609
SD	0.4899
CV%	80.49

Aquakem v. 7.2AQ1
Results from time period:
Fri Mar 15 13:30:07 2024
Fri Mar 15 14:29:20 2024

Sample Id	Sam/Ctr/c/	Test short r	Test type	Result	Result unit	Result date and time	Stat
0.00PPM	A	Phenolics-	P	-0.0055	mg/l	3/15/2024 11:47:40	
0.05PPM	A	Phenolics-	P	0.061	mg/l	3/15/2024 11:47:41	
0.1PPM	A	Phenolics-	P	0.1089	mg/l	3/15/2024 11:47:42	
0.25PPM	A	Phenolics-	P	0.2579	mg/l	3/15/2024 11:47:43	
0.50PPM	A	Phenolics-	P	0.486	mg/l	3/15/2024 11:47:44	
1.0PPM	A	Phenolics-	P	0.9797	mg/l	3/15/2024 11:47:45	
2.0PPM	A	Phenolics-	P	2.0119	mg/l	3/15/2024 11:47:46	
ICV1	S	Phenolics-	P	0.9682	mg/l	3/15/2024 13:30:08	
ICB1	S	Phenolics-	P	-0.0043	mg/l	3/15/2024 13:30:09	
CCV1	S	Phenolics-	P	0.9849	mg/l	3/15/2024 13:30:12	
CCB1	S	Phenolics-	P	-0.004	mg/l	3/15/2024 13:30:14	
PB159616BL	S	Phenolics-	P	-0.0066	mg/l	3/15/2024 13:30:15	
PB159616BS	S	Phenolics-	P	0.967	mg/l	3/15/2024 13:30:17	
IDOC-1	S	Phenolics-	P	0.9744	mg/l	3/15/2024 13:40:17	
IDOC-2	S	Phenolics-	P	0.9632	mg/l	3/15/2024 13:40:18	
IDOC-3	S	Phenolics-	P	0.963	mg/l	3/15/2024 13:40:19	
IDOC-4	S	Phenolics-	P	0.9698	mg/l	3/15/2024 13:40:20	
P1747-03	S	Phenolics-	P	-0.0035	mg/l	3/15/2024 14:29:10	
P1747-03DUP	S	Phenolics-	P	-0.0007	mg/l	3/15/2024 14:29:11	
P1747-03MS	S	Phenolics-	P	0.9876	mg/l	3/15/2024 14:29:13	
P1747-03MSD	S	Phenolics-	P	0.9823	mg/l	3/15/2024 14:29:16	
CCV2	S	Phenolics-	P	0.9993	mg/l	3/15/2024 14:29:17	
CCB2	S	Phenolics-	P	-0.0028	mg/l	3/15/2024 14:29:20	

Calibration results Aquakem 7.2AQ1 Page: 1

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : RM Instrument ID : Konelab

3/15/2024 11:51

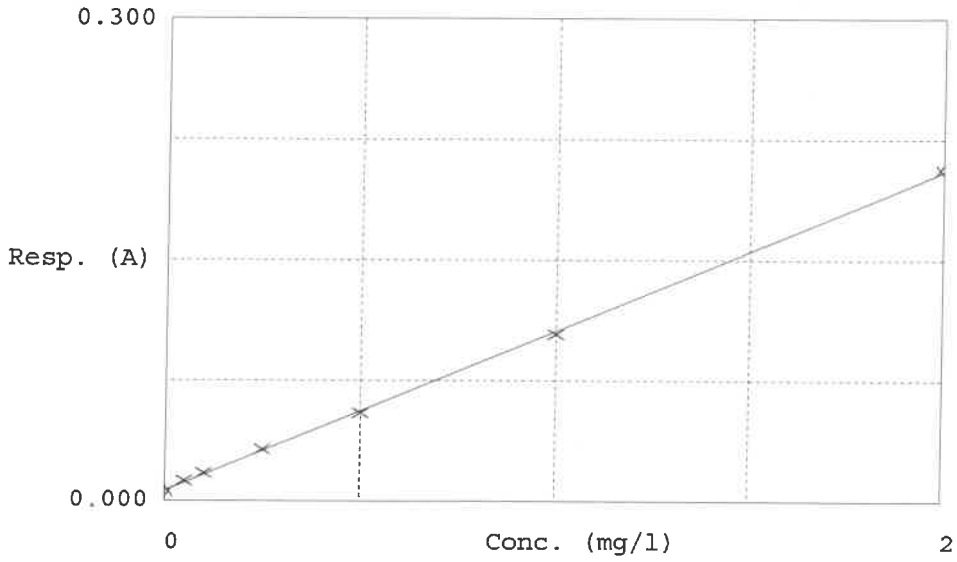
Test Phenolics-

Accepted 3/15/2024 11:51

Factor 10.07
Bias 0.006

Coeff. of det. 0.999669

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	0.00PPM	0.006	-0.0055	0.0000	
2	Phenol-2	0.013	0.0610	0.0500	22.0
3	Phenol-2	0.017	0.1089	0.1000	8.9
4	Phenol-2	0.032	0.2579	0.2500	3.2
5	Phenol-2	0.055	0.4860	0.5000	-2.8
6	Phenol-2	0.104	0.9797	1.0000	-2.0
7	Phenol-2	0.206	2.0119	2.0000	0.6

03/15/2024
RM

CHEMTECH

TOTAL SUSPENDED SOLIDS - SM2540D

SUPERVISOR: Iwona
ANALYST: jignesh
Date: 03/15/2024
Run Number: LB129917
BalanceID: WC SC-6
OvenID: WC OVEN-1
FilterID: 17416528
ThermometerID: WET OVEN#1

TEMP1 IN:	103 °C	03/15/2024 14:00	**TEMP1 OUT:**	104 °C	03/15/2024 15:00
TEMP2 IN:	103 °C	03/15/2024 15:30	**TEMP2 OUT:**	104 °C	03/15/2024 16:30
TEMP3 IN:	104 °C	03/18/2024 09:30	**TEMP3 OUT:**	103 °C	03/18/2024 11:00
TEMP4 IN:	104 °C	03/18/2024 11:30	**TEMP4 OUT:**	103 °C	03/18/2024 13:00

Dish #	Lab ID	Client ID	Empty Dish Weight (g)	Final Empty Dish Weight (g)	Sample Volume (ml)	1st Empty Dish+Sample weight after 1.5hr drying @103-@105°C (g)	2nd Empty Dish+Sample weight after 1.5hr drying @103-@105°C (g)	Final Empty Dish+Sample weight after 1.5hr drying @103-@105°C (g)	Weight (g)	Result mg/L
1	LB129917BL	LB129917BL	1.3526	1.3526	100	1.3527	1.3527	1.3527	0.0001	1
2	LB129917BS	LB129917BS	1.5847	1.5847	100	1.6378	1.6378	1.6378	0.0531	531
3	P1732-01	DRAIN-WATER-TANK-1	1.4160	1.4160	500	1.4272	1.4272	1.4272	0.0112	22.4
4	P1745-02	COMP	1.4173	1.4173	100	1.4486	1.4486	1.4486	0.0313	313
5	P1747-03	MW-01	1.4074	1.4074	1000	1.4646	1.4646	1.4646	0.0572	57.2
6	P1747-03DUP	MW-01DUP	1.4011	1.4011	1000	1.4580	1.4580	1.4580	0.0569	56.9
7	P1775-01	027-OUTFALL	1.4219	1.4219	1000	1.6826	1.6826	1.6826	0.2607	260.7

A = Sample Volume (ml)
B = Final Empty Dish Weight (g)
C = Final Empty Dish + Sample weight after 1.5 hr drying @105°C(g)
D = Weight (g)

Weight (g) = C - B

Result mg/L = $\frac{D}{A} * 1000 * 1000$

WORKLIST(Hardcopy Internal Chain)

LB129917

WorkList Name : tss p1775 **WorkList ID :** 178638 **Department :** Wet-Chemistry **Date :** 03-18-2024 07:45:44

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P1732-01	DRAIN-WATER-TANK-1	Water	TSS	Cool 4 deg C	MAJO01	I31	03/12/2024	SM2540 D
P1745-02 A,	COMP	Water	TSS	Cool 4 deg C	ARAM01	I21	03/13/2024	SM2540 D
P1747-03 G1=	MW-01	Water	TSS	Cool 4 deg C	LIRO01	I31	03/13/2024	SM2540 D
P1775-01 F	027-OUTFALL	Water	TSS	Cool 4 deg C	MINO01	I41	03/13/2024	SM2540 D

Date/Time 03/18/24 08:00
Raw Sample Received by: JD (WC)
Raw Sample Relinquished by: CA SM

Date/Time 03/18/24 12:50
Raw Sample Received by: CA SM
Raw Sample Relinquished by: JD (WC)

LB129942

Test results | Aquakem 7.2AQ1 | Page:

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

3/19/2024 12:29 | Reviewed by : 12 | Instrument ID : Konelab

Test: TKN-NH3

Sample Id	Result	Dil. 1 +	Response	Errors
ICV1	4.806	0.0	0.899	
ICB1	0.046	0.0	0.027	
CCV1	4.807	0.0	0.899	
CCB1	0.052	0.0	0.028	
RL CHECK	0.484	0.0	0.107	97%(50-150) 12 3/19/24
PB159614BL	0.043	0.0	0.026	
PB159614BS	4.832	0.0	0.903	
P1747-03	1.025	0.0	0.206	
P1747-03DUP	1.032	0.0	0.207	
P1747-03MS	5.885	0.0	1.096	
P1747-03MSD	5.922	0.0	1.103	
P1775-01	0.330	0.0	0.079	
P1788-01	15.190	0.0	2.801	Init abs., Test limit hig
P1788-02	2.413	0.0	0.460	
CCV2	4.945	0.0	0.924	
CCB2	0.062	0.0	0.030	
P1788-01DLX2	7.907	0.0	1.467	
CCV3	4.962	0.0	0.927	
CCB3	0.015	0.0	0.021	

N	19
Mean	3.408
SD	3.8671
CV%	113.46

Aquakem v. 7.2AQ1
Results from time period:
Tue Mar 19 10:19:22 2024
Tue Mar 19 12:26:02 2024

Sample Id	Sam/Ctr/cA	Test short n	Test type	Result	Result unit	Result date and time	Stat
0.0PPM	A	TKN-NH3	P	0.1345	mg/l	3/19/2024 10:19:22	
0.5PPM	A	TKN-NH3	P	0.4788	mg/l	3/19/2024 10:19:23	
1.0PPM	A	TKN-NH3	P	0.9701	mg/l	3/19/2024 10:19:24	
2.5PPM	A	TKN-NH3	P	2.47	mg/l	3/19/2024 10:19:25	
5.0PPM	A	TKN-NH3	P	4.9125	mg/l	3/19/2024 10:19:26	
6.7PPM	A	TKN-NH3	P	6.6032	mg/l	3/19/2024 10:19:27	
10.0PPM	A	TKN-NH3	P	10.0976	mg/l	3/19/2024 10:19:28	
ICV1	S	TKN-NH3	P	4.8056	mg/l	3/19/2024 11:15:39	
ICB1	S	TKN-NH3	P	0.0464	mg/l	3/19/2024 11:15:41	
CCV1	S	TKN-NH3	P	4.807	mg/l	3/19/2024 11:15:43	
CCB1	S	TKN-NH3	P	0.0518	mg/l	3/19/2024 11:15:45	
RL CHECK	S	TKN-NH3	P	0.4837	mg/l	3/19/2024 11:15:48	
PB159614BL	S	TKN-NH3	P	0.043	mg/l	3/19/2024 11:15:49	
PB159614BS	S	TKN-NH3	P	4.8321	mg/l	3/19/2024 11:26:21	
P1747-03	S	TKN-NH3	P	1.0248	mg/l	3/19/2024 11:26:23	
P1747-03DUP	S	TKN-NH3	P	1.0323	mg/l	3/19/2024 11:26:25	
P1747-03MS	S	TKN-NH3	P	5.8849	mg/l	3/19/2024 11:26:27	
P1747-03MSD	S	TKN-NH3	P	5.922	mg/l	3/19/2024 11:26:29	
P1775-01	S	TKN-NH3	P	0.3296	mg/l	3/19/2024 11:35:22	
P1788-01	S	TKN-NH3	P	15.1904	mg/l	3/19/2024 11:35:23	
P1788-02	S	TKN-NH3	P	2.4127	mg/l	3/19/2024 11:35:24	
CCV2	S	TKN-NH3	P	4.9445	mg/l	3/19/2024 11:35:25	
CCB2	S	TKN-NH3	P	0.0616	mg/l	3/19/2024 11:35:26	
P1788-01DLX2	S	TKN-NH3	P	7.907	mg/l	3/19/2024 12:25:56	
CCV3	S	TKN-NH3	P	4.9621	mg/l	3/19/2024 12:25:59	
CCB3	S	TKN-NH3	P	0.0153	mg/l	3/19/2024 12:26:02	

Calibration results Aquakem 7.2AQ1 Page: 1

CHEMTECH CONSULTING GROUP INC
284 Sheffield Street, Mountainside, NJ 07092

Reviewed by : 12 Instrument ID : Konelab

3/19/2024 10:27

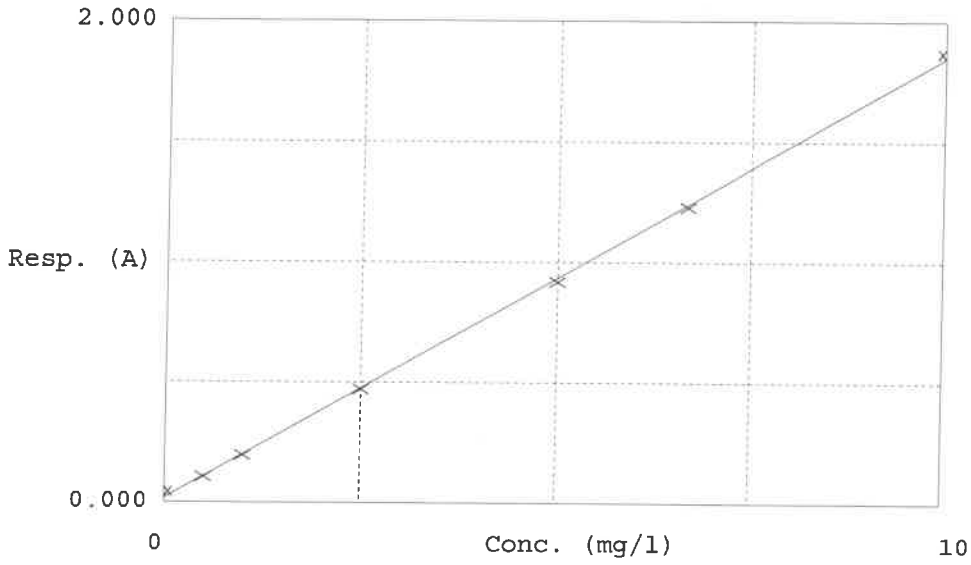
Test TKN-NH3

Accepted 3/19/2024 10:27

Factor 5.459
Bias 0.018

Coeff. of det. 0.999498

Errors



	Calibrator	Response	Calc. con.	Conc.	Errors
1	0.00PPM	0.043	0.1345	0.0000	-
2	TKN-10	0.106	0.4788	0.5000	-4.2
3	TKN-10	0.196	0.9701	1.0000	-3.0
4	TKN-10	0.471	2.4700	2.5000	-1.2
5	TKN-10	0.918	4.9125	5.0000	-1.8
6	TKN-10	1.228	6.6032	6.6667	-1.4
7	TKN-10	1.868	10.0976	10.0000	1.0

Re

12
3/19/24

CHEMTECH

Water TKN Preparation Sheet

PB159614

SOP ID : MSM4500-N Org C-TKN-11

SDG No : N/A

Matrix : WATER

Pippete ID : WC

Balance ID : N/A

Hood ID : HOOD#2&3

Block ID : WC-DIST-BLOCK-1

Weigh By : N/A

Start Digest Date: 03/18/2024 **Time :** 12:40 **Temp :** 370 °C

End Digest Date: 03/18/2024 **Time :** 14:10 **Temp :** 375 °C

Start Distillation Date: 03/18/2024 **Time :** 14:30 **Temp :** 150 °C

End Distillation Date: 03/18/2024 **Time :** 15:40 **Temp :** 160 °C

Digestion tube ID : M5216

Filter paper ID : N/A

pH Meter ID : N/A

Block Thermometer ID : Therm#2(2179)

Prep Technician Signature: 12

Supervisor Signature: JP

Standared Name	MLS USED	STD REF. # FROM LOG
TKN CAL STD	50.0ML	WP106964
TKN CCV STD	50.0ML	WP106965
TKN ICV STD	50.0ML	WP106966
TKN LCS STD	50.0ML	WP106967
MS/MSD SPIKE SOL.	0.25ML	WP104563

Chemical Used	ML/SAMPLE USED	Lot Number
TKN Digestion Solution	10.0ML	WP105967
TKN DISTILLATION BUFFER	10.0ML	WP106366
H2SO4 0.04N	5.0ML	WP104780
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

RL CHECK WP106965 , 10 ML

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
03/18/24 17:05	12 (WC)	12 (WC)
	Preparation Group	Analysis Group

CHEMTECH

Water TKN Preparation Sheet

PB159614

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P1747-03	MW-01	50	50	<2	N/A	N/A	N/A	N/A	N/A
P1747-03DUP	MW-01DUP	50	50	<2	N/A	N/A	N/A	N/A	N/A
P1747-03MS	MW-01MS	50	50	<2	N/A	N/A	N/A	N/A	N/A
P1747-03MSD	MW-01MSD	50	50	<2	N/A	N/A	N/A	N/A	N/A
P1775-01	027-OUTFALL	50	50	<2	N/A	N/A	N/A	N/A	N/A
P1788-01	PEZOMETER-200	50	50	<2	N/A	N/A	N/A	N/A	N/A
P1788-02	PEZOMETER-206	50	50	<2	N/A	N/A	N/A	N/A	N/A
PB159614BL	PBW614	50	50	<2	N/A	N/A	N/A	N/A	N/A
PB159614BS	LCS614	50	50	<2	N/A	N/A	N/A	N/A	N/A

CHEMTECH

Water Phenolics Preparation Sheet

PB159616

SOP ID : M420.1 & 9065-Phenolics-13

SDG No : N/A

Start Digest Date: 03/15/2024 **Time :** 11:30 **Temp :** 150 °C

Matrix : WATER

End Digest Date: 03/15/2024 **Time :** 12:30 **Temp :** 160 °C

Pippete ID : WC

Balance ID : N/A

Hood ID : HOOD#2 **Digestion tube ID :** M5216 **Block Thermometer ID :** WC CYANIDE

Block ID : WC-DIST-BLOCK-1 **Filter paper ID :** N/A **Prep Technician Signature:** RM

Weigh By : RM **pH Meter ID :** N/A **Supervisor Signature:** JC

Standared Name	MLS USED	STD REF. # FROM LOG
LCSW	1.0ML	WP106906
MS/MSD SPIKE SOL.	1.0ML	WP106905
PBW	50.0ML	W2606
N/A	N/A	N/A
N/A	N/A	N/A

Chemical Used	ML/SAMPLE USED	Lot Number
pH Paper 0-14	N/A	W3056
CONC H2SO4	N/A	M5211
KI-starch paper	N/A	W2965
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Extraction Conformance/Non-Conformance Comments:

N/A

Date / Time	Prepped Sample Relinquished By/Location	Received By/Location
03/15/2024 12:40	RM (WC)	RM (WC)
	Preparation Group	**Analysis Group**

CHEMTECH

Water Phenolics Preparation Sheet

PB159616

Lab Sample ID	Client Sample ID	Initial Vol (ml)	Final Vol (ml)	pH	Sulfide	Oxidizing	Nitrate/ Nitrite	Comment	Prep Pos
P1747-03	MW-01	50	50	<2	N/A	Negative	N/A	N/A	N/A
P1747-03DUP	MW-01DUP	50	50	<2	N/A	Negative	N/A	N/A	N/A
P1747-03MS	MW-01MS	50	50	<2	N/A	Negative	N/A	N/A	N/A
P1747-03MSD	MW-01MSD	50	50	<2	N/A	Negative	N/A	N/A	N/A
PB159616BL	PBW616	50	50	<2	N/A	Negative	N/A	N/A	N/A
PB159616BS	LCS616	50	50	<2	N/A	Negative	N/A	N/A	N/A

IDOC-1 50 50

IDOC-2 50 50

IDOC-3 50 50

IDOC-4 50 50

RM

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: DO METER

Daily Analysis Runlog For Sequence/QCBatch ID # LB129875

Review By	jignesh	Review On	3/19/2024 1:29:05 PM
Supervise By	Iwona	Supervise On	3/19/2024 2:00:09 PM
SubDirectory	LB129875	Test	CBOD5

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP106941,W2977,WP105744,W2913,W2914,W2976,WP106943,WP106942,WP106529

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB129875BL	LB129875BL	MB	03/14/24 10:30		Rubina	OK
2	LB129875BS	LB129875BS	LCS	03/14/24 10:30		Rubina	OK
3	LB129875BSD1	LB129875BSD1	LCS	03/14/24 10:30		Rubina	OK
4	LB129875BSD2	LB129875BSD2	LCS	03/14/24 10:30		Rubina	OK
5	P1747-03	MW-01	SAM	03/14/24 10:30		Rubina	OK
6	P1747-03DUP	MW-01DUP	DUP	03/14/24 10:30		Rubina	OK

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Instrument ID: IGN-1

Daily Analysis Runlog For Sequence/QCBatch ID # LB129879

Review By	Nikita	Review On	3/14/2024 3:19:42 PM
Supervise By	Iwona	Supervise On	3/14/2024 3:22:49 PM
SubDirectory	LB129879	Test	Flash Point

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	W3080

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	ICV	ICV	ICV	03/14/24 12:45		Nikita	OK
2	P1747-03	MW-01	SAM	03/14/24 13:15		Nikita	OK
3	P1747-03DUP	MW-01DUP	DUP	03/14/24 13:45		Nikita	OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QCBatch ID # LB129881

Review By	Rubina	Review On	3/14/2024 2:10:32 PM
Supervise By	Iwona	Supervise On	3/14/2024 2:11:21 PM
SubDirectory	LB129881	Test	Hexavalent Chromium

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP106949,WP106948,WP106946,WP106945,WP106884,WP106542,WP106947,WP106952,WP106950,WP106951

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	03/14/24 11:00		Rubina	OK
2	CAL2	CAL2	CAL	03/14/24 11:01		Rubina	OK
3	CAL3	CAL3	CAL	03/14/24 11:02		Rubina	OK
4	CAL4	CAL4	CAL	03/14/24 11:03		Rubina	OK
5	CAL5	CAL5	CAL	03/14/24 11:04		Rubina	OK
6	CAL6	CAL6	CAL	03/14/24 11:05		Rubina	OK
7	CAL7	CAL7	CAL	03/14/24 11:06		Rubina	OK
8	ICV	ICV	ICV	03/14/24 11:07		Rubina	OK
9	ICB	ICB	ICB	03/14/24 11:08		Rubina	OK
10	CCV1	CCV1	CCV	03/14/24 11:09		Rubina	OK
11	CCB1	CCB1	CCB	03/14/24 11:10		Rubina	OK
12	RL Check	RL Check	SAM	03/14/24 11:11		Rubina	OK
13	LB129881BL	LB129881BL	MB	03/14/24 11:12		Rubina	OK
14	LB129881BS	LB129881BS	LCS	03/14/24 11:13		Rubina	OK
15	P1747-03	MW-01	SAM	03/14/24 11:14		Rubina	OK
16	P1747-03DUP	MW-01DUP	DUP	03/14/24 11:15		Rubina	OK
17	P1747-03MS	MW-01MS	MS	03/14/24 11:16	1ML WP106017+99.0ML SAMPLE	Rubina	OK
18	P1747-03MSD	MW-01MSD	MSD	03/14/24 11:17	1ML WP106017+99.0ML SAMPLE	Rubina	OK
19	CCV2	CCV2	CCV	03/14/24 11:18		Rubina	OK

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Instrument ID: SPECTROPHOTOMETER-1

Daily Analysis Runlog For Sequence/QCBatch ID # LB129881

Review By	Rubina	Review On	3/14/2024 2:10:32 PM
Supervise By	Iwona	Supervise On	3/14/2024 2:11:21 PM
SubDirectory	LB129881	Test	Hexavalent Chromium

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP106949,WP106948,WP106946,WP106945,WP106884,WP106542,WP106947,WP106952,WP106950,WP106951

20	CCB2	CCB2	CCB	03/14/24 11:19		Rubina	OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: WC SC-3

Daily Analysis Runlog For Sequence/QCBatch ID # LB129888

Review By	jignesh	Review On	3/15/2024 9:40:06 AM
Supervise By	Iwona	Supervise On	3/15/2024 10:19:46 AM
SubDirectory	LB129888	Test	TS

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	N/A

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB129888BL	LB129888BL	MB	03/14/24 11:00		jignesh	OK
2	P1747-03	MW-01	SAM	03/14/24 11:00		jignesh	OK
3	P1747-03DUP	MW-01DUP	DUP	03/14/24 11:00		jignesh	OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: TITRAMETRIC

Daily Analysis Runlog For Sequence/QCBatch ID # LB129890

Review By	Rubina	Review On	3/14/2024 4:06:10 PM
Supervise By	Iwona	Supervise On	3/14/2024 4:06:24 PM
SubDirectory	LB129890	Test	Chloride

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	WP106963,WP105287,WP106962,W3075

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB129890BL	LB129890BL	MB	03/14/24 15:15		Iwona	OK
2	LB129890BS	LB129890BS	LCS	03/14/24 15:18		Iwona	OK
3	P1747-03	MW-01	SAM	03/14/24 15:22		Iwona	OK
4	P1747-03DUP	MW-01DUP	DUP	03/14/24 15:25		Iwona	OK
5	P1747-03MS	MW-01MS	MS	03/14/24 15:28		Iwona	OK
6	P1747-03MSD	MW-01MSD	MSD	03/14/24 15:31		Iwona	OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: WC SC-3

Daily Analysis Runlog For Sequence/QCBatch ID # LB129904

Review By	jignesh	Review On	3/15/2024 1:47:56 PM
Supervise By	Iwona	Supervise On	3/15/2024 2:44:49 PM
SubDirectory	LB129904	Test	Non-Polar Material

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	W3076,M4909,EP2458,WP106917,W2839,NA,WP105918,WP105919,NA

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB129904BL	LB129904BL	MB	03/15/24 15:00		jignesh	OK
2	LB129904BS	LB129904BS	LCS	03/15/24 15:00		jignesh	OK
3	LB129904BSD	LB129904BSD	LCSD	03/15/24 15:00		jignesh	OK
4	P1747-03	MW-01	SAM	03/15/24 15:00		jignesh	OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB129910

Review By	Iwona	Review On	3/18/2024 11:45:03 AM
Supervise By	Sohil	Supervise On	3/18/2024 11:46:18 AM
SubDirectory	LB129910	Test	Phenolics

STD. NAME	STD REF.#
ICAL Standard	WP106977
ICV Standard	WP106979
CCV Standard	WP106978
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	WP106906
Chk Standard	WP104400,WP104401,WP106980

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.00PPM	0.00PPM	CAL1	03/15/24 11:47		Rubina	OK
2	0.05PPM	0.05PPM	CAL2	03/15/24 11:47		Rubina	OK
3	0.1PPM	0.1PPM	CAL3	03/15/24 11:47		Rubina	OK
4	0.25PPM	0.25PPM	CAL4	03/15/24 11:47		Rubina	OK
5	0.50PPM	0.50PPM	CAL5	03/15/24 11:47		Rubina	OK
6	1.0PPM	1.0PPM	CAL6	03/15/24 11:47		Rubina	OK
7	2.0PPM	2.0PPM	CAL7	03/15/24 11:47		Rubina	OK
8	ICV1	ICV1	ICV	03/15/24 13:30		Rubina	OK
9	ICB1	ICB1	ICB	03/15/24 13:30		Rubina	OK
10	CCV1	CCV1	CCV	03/15/24 13:30		Rubina	OK
11	CCB1	CCB1	CCB	03/15/24 13:30		Rubina	OK
12	PB159616BL	PB159616BL	MB	03/15/24 13:30		Rubina	OK
13	PB159616BS	PB159616BS	LCS	03/15/24 13:30		Rubina	OK
14	IDOC-1	IDOC-1	LCS	03/15/24 13:40		Rubina	OK
15	IDOC-2	IDOC-2	LCS	03/15/24 13:40		Rubina	OK
16	IDOC-3	IDOC-3	LCS	03/15/24 13:40		Rubina	OK
17	IDOC-4	IDOC-4	LCS	03/15/24 13:40		Rubina	OK
18	P1747-03	MW-01	SAM	03/15/24 14:29		Rubina	OK
19	P1747-03DUP	MW-01DUP	DUP	03/15/24 14:29		Rubina	OK
20	P1747-03MS	MW-01MS	MS	03/15/24 14:29		Rubina	OK

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Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB129910

Review By	Iwona	Review On	3/18/2024 11:45:03 AM
Supervise By	Sohil	Supervise On	3/18/2024 11:46:18 AM
SubDirectory	LB129910	Test	Phenolics

STD. NAME	STD REF.#
ICAL Standard	WP106977
ICV Standard	WP106979
CCV Standard	WP106978
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	WP106906
Chk Standard	WP104400,WP104401,WP106980

21	P1747-03MSD	MW-01MSD	MSD	03/15/24 14:29		Rubina	OK
22	CCV2	CCV2	CCV	03/15/24 14:29		Rubina	OK
23	CCB2	CCB2	CCB	03/15/24 14:29		Rubina	OK

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Instrument ID: WC SC-3

Daily Analysis Runlog For Sequence/QCBatch ID # LB129917

Review By	jignesh	Review On	3/18/2024 11:26:46 AM
Supervise By	Iwona	Supervise On	3/18/2024 11:29:12 AM
SubDirectory	LB129917	Test	TSS

STD. NAME	STD REF.#
ICAL Standard	N/A
ICV Standard	N/A
CCV Standard	N/A
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	N/A
Chk Standard	N/A

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB129917BL	LB129917BL	MB	03/18/24 09:30		jignesh	OK
2	LB129917BS	LB129917BS	LCS	03/18/24 09:30		jignesh	OK
3	P1732-01	DRAIN-WATER-TANK	SAM	03/18/24 09:30		jignesh	OK
4	P1745-02	COMP	SAM	03/18/24 09:30		jignesh	OK
5	P1747-03	MW-01	SAM	03/18/24 09:30		jignesh	OK
6	P1747-03DUP	MW-01DUP	DUP	03/18/24 09:30		jignesh	OK
7	P1775-01	027-OUTFALL	SAM	03/18/24 09:30		jignesh	OK

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Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB129942

Review By	Iwona	Review On	3/20/2024 2:45:06 PM
Supervise By	Sohil	Supervise On	3/20/2024 2:47:23 PM
SubDirectory	LB129942	Test	TKN

STD. NAME	STD REF.#
ICAL Standard	WP106964
ICV Standard	WP106966
CCV Standard	WP106965
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	WP106967
Chk Standard	WP105476,WP106381,WP106382,WP106383

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPM	0.0PPM	CAL1	03/19/24 10:19		Iwona	OK
2	0.5PPM	0.5PPM	CAL2	03/19/24 10:19		Iwona	OK
3	1.0PPM	1.0PPM	CAL3	03/19/24 10:19		Iwona	OK
4	2.5PPM	2.5PPM	CAL4	03/19/24 10:19		Iwona	OK
5	5.0PPM	5.0PPM	CAL5	03/19/24 10:19		Iwona	OK
6	6.7PPM	6.7PPM	CAL6	03/19/24 10:19		Iwona	OK
7	10.0PPM	10.0PPM	CAL7	03/19/24 10:19		Iwona	OK
8	ICV1	ICV1	ICV	03/19/24 11:15		Iwona	OK
9	ICB1	ICB1	ICB	03/19/24 11:15		Iwona	OK
10	CCV1	CCV1	CCV	03/19/24 11:15		Iwona	OK
11	CCB1	CCB1	CCB	03/19/24 11:15		Iwona	OK
12	RL	RL	SAM	03/19/24 11:15		Iwona	OK
13	PB159614BL	PB159614BL	MB	03/19/24 11:15		Iwona	OK
14	PB159614BS	PB159614BS	LCS	03/19/24 11:26		Iwona	OK
15	P1747-03	MW-01	SAM	03/19/24 11:26		Iwona	OK
16	P1747-03DUP	MW-01DUP	DUP	03/19/24 11:26		Iwona	OK
17	P1747-03MS	MW-01MS	MS	03/19/24 11:26		Iwona	OK
18	P1747-03MSD	MW-01MSD	MSD	03/19/24 11:26		Iwona	OK
19	P1775-01	027-OUTFALL	SAM	03/19/24 11:35		Iwona	OK
20	P1788-01	PEZOMETER-200	SAM	03/19/24 11:35		Iwona	OK

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Instrument ID: KONELAB

Daily Analysis Runlog For Sequence/QCBatch ID # LB129942

Review By	Iwona	Review On	3/20/2024 2:45:06 PM
Supervise By	Sohil	Supervise On	3/20/2024 2:47:23 PM
SubDirectory	LB129942	Test	TKN

STD. NAME	STD REF.#
ICAL Standard	WP106964
ICV Standard	WP106966
CCV Standard	WP106965
ICSA Standard	N/A
CRI Standard	N/A
LCS Standard	WP106967
Chk Standard	WP105476,WP106381,WP106382,WP106383

21	P1788-02	PEZOMETER-206	SAM	03/19/24 11:35		Iwona	OK
22	CCV2	CCV2	CCV	03/19/24 11:35		Iwona	OK
23	CCB2	CCB2	CCB	03/19/24 11:35		Iwona	OK
24	P1788-01DL	PEZOMETER-200DL	SAM	03/19/24 12:25		Iwona	OK
25	CCV3	CCV3	CCV	03/19/24 12:25		Iwona	OK
26	CCB3	CCB3	CCB	03/19/24 12:26		Iwona	OK

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Instrument ID:

Daily Analysis Runlog For Sequence/QCBatch ID

Review By	Review On
Supervise By	Supervise On

STD. NAME	STD REF.#
ICAL Standard	
ICV Standard	
CCV Standard	
ICSA Standard	
CRI Standard	
LCS Standard	
Chk Standard	

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status

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Prep Standard - Chemical Standard Summary

Order ID : P1747

Test : CBOD5,Chloride,Flash Point,Hexavalent Chromium,Non-Polar Material,Phenolics,TKN,Total Nitrogen,TS,TSS

Prepbatch ID : PB159614,PB159616,

Sequence ID/Qc Batch ID: LB129875,LB129879,LB129881,LB129888,LB129890,LB129904,LB129910,LB129917,LB129942,LB12

Standard ID :
EP2458,WP104400,WP104401,WP104563,WP104564,WP104780,WP105287,WP105476,WP105703,WP105744,WP105917,WP105918,WP105919,WP105967,WP106017,WP106018,WP106366,WP106367,WP106368,WP106381,WP106382,WP106383,WP106529,WP106542,WP106884,WP106905,WP106906,WP106917,WP106941,WP106942,WP106943,WP106944,WP106945,WP106946,WP106947,WP106948,WP106949,WP106950,WP106951,WP106952,WP106962,WP106963,WP106964,WP106965,WP106966,WP106967,WP106977,WP106978,WP106979,WP106980,

Chemical ID :
E3551,E3708,M4123,M4909,M5037,M5211,M5792,M5827,W1992,W1993,W2211,W2338,W2454,W2606,W2647,W2651,W2652,W2653,W2654,W2663,W2666,W2676,W2697,W2712,W2784,W2788,W2839,W2858,W2900,W2913,W2914,W2942,W2965,W2976,W2977,W2979,W2983,W3004,W3049,W3056,W3059,W3073,W3075,W3076,W3080,

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2458	03/08/2024	07/03/2024	Rajesh Parikh	Extraction_SCALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 03/08/2024

FROM 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
672	ammonia buffer for phenol	WP104400	09/28/2023	03/28/2024	Iwona Zarych	WETCHEM_SCALE_5 (WC SC-5)	None	Sohil Jodhani 10/02/2023

FROM 143.00000ml of W2676 + 16.90000gram of W1992 + 90.10000ml of W2606 = Final Quantity: 250.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1935	Potassium ferricyanide solution-phenol	WP104401	09/28/2023	03/28/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 10/02/2023

FROM 8.00000gram of W2211 + 92.00000ml of W2606 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
153	Ammonia Stock Std. (1000 ppm)	WP104563	10/06/2023	04/06/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 10/10/2023

FROM 3.81900gram of W1992 + 996.18100ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1895	Ammonia Stock Std, 1000PPM-SS	WP104564	10/06/2023	04/06/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 10/10/2023

FROM 3.81900gram of W1993 + 996.18100ml of W2606 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1597	0.04 N H2SO4	WP104780	10/18/2023	04/18/2024	Iwona Zarych	None	WETCHEM_PIPETTE_3 (WC)	Sohil Jodhani 10/23/2023

FROM 1.00000ml of M5211 + 999.00000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1837	Chloride Blank	WP105287	11/13/2023	05/13/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 11/16/2023

FROM 0.10000gram of W2647 + 999.90000ml of W2606 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
740	sodium nitroferricyanide for ammonia	WP105476	11/28/2023	05/28/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 12/05/2023

FROM 0.05000gram of W2666 + 99.95000ml of W2606 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3890	Chloride Stock Std - 10000ppm	WP105703	12/14/2023	06/14/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 12/14/2023

FROM 16.48500gram of M4123 + 985.00000ml of W2606 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1841	Sulfuric Acid, 1N	WP105744	12/15/2023	06/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 12/15/2023

FROM 2.80000ml of M5037 + 97.20000ml of W2606 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2456	COD Stock std, 1000ppm	WP105917	12/27/2023	01/03/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 01/03/2024

FROM 0.08500gram of W2784 + 100.00000ml of W2606 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2457	COD Stock std-SS, 1000ppm	WP105918	12/27/2023	01/03/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 01/03/2024

FROM 0.08500gram of W2338 + 100.00000ml of W2606 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2458	COD CCV std, 50ppm	WP105919	12/27/2023	01/03/2024	Iwona Zarych	None	WETCHEM_PIPETTE_3 (WC)	Sohil Jodhani 01/03/2024

FROM 9.50000ml of W2606 + 0.50000ml of WP105917 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
619	TKN digestion solution	WP105967	01/03/2024	07/03/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 01/03/2024

FROM 134.00000gram of W2983 + 134.00000ml of M5211 + 7.30000gram of W2697 + 725.00000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1993	HEXAVALENTCHROMIUM STOCK STD 1, 50PPM	WP106017	01/09/2024	07/09/2024	Rubina Mughal	WETCHEM_SCALE_7 (WCSC-6)	None	Iwona Zarych 01/09/2024

FROM 0.14140gram of W2651 + 1000.00000ml of W2606 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1994	HEXAVALENTCHROMIUM STOCK STD 2, 50PPM	WP106018	01/09/2024	07/09/2024	Rubina Mughal	WETCHEM_SCALE_7 (WCSC-6)	None	Iwona Zarych 01/09/2024

FROM 0.14140gram of W2652 + 1000.00000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1338	TKN DISTILLING BUFFER	WP106366	01/31/2024	07/04/2024	Rubina Mughal	WETCHEM_SCALE_4 (WCSC-4)	None	Iwona Zarych 01/31/2024

FROM 0.47500L of W2606 + 25.00000gram of W2454 + 500.00000gram of W2942 = Final Quantity: 1.000 L

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1903	Phenol stock std, 1000PPM	WP106367	01/31/2024	07/31/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 01/31/2024

FROM 1.00000gram of W2663 + 999.00000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1904	Phenol stock std, 1000PPM-SS	WP106368	01/31/2024	07/31/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 01/31/2024

FROM 1.00000gram of W2858 + 999.00000ml of W2606 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
289	Sodium Hypochlorite for Ammonia	WP106381	02/01/2024	06/30/2024	Rubina Mughal	None	None	Iwona Zarych 02/05/2024

FROM 50.00000ml of W2606 + 50.00000ml of W3073 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
290	Phenol reagent for Ammonia	WP106382	02/01/2024	07/04/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 02/05/2024

FROM 3.20000gram of W2942 + 8.30000gram of W2663 + 88.80000ml of W2606 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
635	EDTA BUFFER FOR AMMONIA	WP106383	02/01/2024	07/04/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 02/05/2024

FROM 5.50000gram of W2942 + 950.00000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1571	Sodium hydroxide, 1N	WP106529	02/09/2024	07/04/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	None	Sohil Jodhani 02/12/2024

FROM 4.00000gram of W2942 + 96.00000ml of W2606 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
922	0.2N SULFURIC ACID	WP106542	02/12/2024	08/12/2024	Rubina Mughal	None	Glass Pipette-A	Iwona Zarych 02/13/2024

FROM 5.60000ml of M5037 + 994.40000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
114	hexavalent chromium color reagent	WP106884	03/08/2024	03/15/2024	Nikita Patel	WETCHEM_SCALE_5 (WCSC-5)	None	Iwona Zarych 03/08/2024

FROM 0.25000gram of W2979 + 50.00000ml of E3708 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1478	Phenol Intermediate Std - 50PPM	WP106905	03/11/2024	04/11/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/11/2024

FROM 47.50000ml of W2606 + 2.50000ml of WP106367 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1635	Phenol Intermediate Std Second Source-50PPM	WP106906	03/11/2024	04/11/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/11/2024

FROM 47.50000ml of W2606 + 2.50000ml of WP106368 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
229	1:1 HCL	WP106917	03/13/2024	08/05/2024	Jignesh Parikh	None	None	Iwona Zarych 03/13/2024

FROM 500.00000ml of M5792 + 500.00000ml of W2606 = Final Quantity: 1.000 L

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
127	BOD Dilution fluid	WP106941	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 18.00000L of W2606 + 3.00000PILLOW of W2900 = Final Quantity: 18.000 L

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
129	Glutamic acid-glucose mix for BOD	WP106942	03/14/2024	03/15/2024	Rubina Mughal	WETCHEM_SCALE_7 (WCSC-6)	None	Iwona Zarych 03/19/2024

FROM 0.15000gram of W2653 + 0.15000gram of W2654 + 1000.00000ml of W2606 = Final Quantity: 1000.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
128	polyseed seed control	WP106943	03/14/2024	03/15/2024	Rubina Mughal	None	None	Iwona Zarych 03/19/2024

FROM 1.00000PILLOW of W3059 + 300.00000ml of WP106941 = Final Quantity: 300.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1103	HEX CHROME INTERMEDIATE STD SOURCE 1 (5PPM)	WP106944	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 9.00000ml of W2606 + 1.00000ml of WP106017 = Final Quantity: 10.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
110	calibration std. hexchrome 0 ppm	WP106945	03/14/2024	03/15/2024	Rubina Mughal	None	None	Iwona Zarych 03/19/2024

FROM 100.00000ml of W2606 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
109	calibration std. hexchrome 0.01 ppm	WP106946	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 99.80000ml of W2606 + 0.20000ml of WP106944 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3800	Calibration Std Hexachrome 0.025 ppm	WP106947	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 99.50000ml of W2606 + 0.50000ml of WP106944 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
108	Calibration Std. hexchrome 0.05 ppm	WP106948	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 99.00000ml of W2606 + 1.00000ml of WP106944 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
107	Calibration Std. hexchrome 0.1 ppm	WP106949	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 99.80000ml of W2606 + 0.20000ml of WP106017 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3808	Calibration and CCV std HexChrome 0.5PPM	WP106950	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 99.00000ml of W2606 + 1.00000ml of WP106017 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3809	Calibration std HexChrome 1.0PPM	WP106951	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 98.00000ml of W2606 + 2.00000ml of WP106017 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3804	Hexavalent Chromium ICV-LCS Std	WP106952	03/14/2024	03/15/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 99.00000ml of W2606 + 1.00000ml of WP106018 = Final Quantity: 100.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3899	Chloride LCS std - 50ppm	WP106962	03/14/2024	03/15/2024	Iwona Zarych	None	WETCHEM_PIPETTE_3 (WC)	Sohil Jodhani 03/20/2024

FROM 19.90000ml of W2606 + 0.10000ml of WP105703 = Final Quantity: 20.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1459	Indicator-acidifier reagent - Chloride	WP106963	03/14/2024	04/14/2024	Iwona Zarych	WETCHEM_SCALE_5 (WCSC-5)	Glass Pipette-A	Sohil Jodhani 03/20/2024

FROM 0.03000gram of W2712 + 0.25000gram of W3049 + 100.00000ml of W2788 + 4.00000ml of M5827 = Final Quantity: 105.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
295	TKN Calibration Std (10 ppm)	WP106964	03/15/2024	03/22/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 49.50000ml of W2606 + 0.50000ml of WP104563 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
297	TKN CCV STD 5 ppm	WP106965	03/15/2024	03/22/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 49.75000ml of W2606 + 0.25000ml of WP104563 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
296	TKN ICV STD 5 ppm	WP106966	03/15/2024	03/22/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 49.75000ml of W2606 + 0.25000ml of WP104564 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
298	TKN LCS STD 5 ppm	WP106967	03/15/2024	03/22/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 49.75000ml of W2606 + 0.25000ml of WP104564 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1633	Phenol Calibration Std, 2PPM	WP106977	03/15/2024	03/16/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 48.00000ml of W2606 + 2.00000ml of WP106905 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1634	Phenol CCV Std, 1PPM	WP106978	03/15/2024	03/16/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 49.00000ml of W2606 + 1.00000ml of WP106905 = Final Quantity: 50.000 ml

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Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1636	Phenol ICV Std, 1PPM	WP106979	03/15/2024	03/16/2024	Rubina Mughal	None	WETCHEM_PIPETTE_3 (WC)	Iwona Zarych 03/19/2024

FROM 49.00000ml of W2606 + 1.00000ml of WP106906 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
506	4-AMINOANTIPYRINE	WP106980	03/15/2024	03/16/2024	Rubina Mughal	WETCHEM_SCALE_5 (WCSC-5)	Glass Pipette-A	Iwona Zarych 03/19/2024

FROM 0.40000gram of W3004 + 20.00000ml of W2606 = Final Quantity: 20.000 ml

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	313201	07/03/2024	01/03/2024 / Rajesh	07/20/2023 / Rajesh	E3551

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	23H1462005	03/01/2029	03/01/2024 / Rajesh	03/01/2024 / Rajesh	E3708

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3624-05 / Sodium Chloride, Crystal (cs/4x2.5kg)	0000187425	08/01/2024	05/24/2018 / mohan	03/02/2018 / mohan	M4123

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140440 / TEST PAPERS,PH,0-2.5,.2SENSI, 100PK	HC908519	06/30/2024	11/28/2022 / jaswal	08/09/2021 / jaswal	M4909

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	0000250349	12/15/2024	01/06/2022 / mohan	09/18/2021 / mohan	M5037

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	22D0862014	01/20/2025	08/22/2022 /	04/26/2022 / mohan	M5211

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	22D1462006	08/05/2024	02/05/2024 / Al-Terek	02/24/2022 / Al-Terek	M5792

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9598-34 / Nitric Acid, Instra-Analyzed (cs/4x2.5L)	22A2562001	09/08/2024	03/08/2024 / Al-Terek	01/12/2022 / Al-Terek	M5827

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0660-1 / AMMONIUM CHLORIDE, ACS, 500G	WL13B	04/08/2025	04/08/2015 / apatel	04/08/2015 / apatel	W1992

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0660-1 / AMMONIUM CHLORIDE, ACS, 500G	XE09B	04/08/2025	04/08/2015 / apatel	04/08/2015 / apatel	W1993

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	97062-260 / POTASSIUM FERRICYANIDE ACS GRADE 500G	1136C335	03/01/2027	03/01/2017 / apatel	02/28/2017 / apatel	W2211

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	178879	03/16/2028	03/16/2018 / apatel	03/16/2018 / apatel	W2338

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3946-1 / Sodium Thiosulfate Pentahydrate, 500 gms	0000209717	08/20/2024	12/11/2018 /	12/04/2018 / AMANDEEP	W2454

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	10/24/2024	10/24/2019 / apatel	10/24/2019 / apatel	W2606

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3506-5 / SODIUM BICARBONATE, PWD, ACS, 2.5KG	0000240594	06/03/2026	02/24/2020 / AMANDEEP	01/20/2020 / apatel	W2647

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AA13450-36 / Potassium Dichromate, 500g(NEW)	T15F019	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2651

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P188-500 / Potassium Dichromate, 500g(new-2nd lot)	194664	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2652

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AC156212500 / GLUTAMIC ACID BIOCHEM REG, 250G	A0405990	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2653

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	D16-500 / DEXTROSE ANHYDROUS ACS REAGENT, 500G(New)	186122A	01/24/2030	01/24/2020 / apatel	01/24/2020 / apatel	W2654

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P1060-10 / PHENOL, ACS, 500G	2HD0179	01/27/2030	01/27/2020 / apatel	01/27/2020 / apatel	W2663

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	87683 / Sodium Nitroferricyanide 250g	W12F013	02/10/2030	02/10/2020 / apatel	02/10/2020 / apatel	W2666

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J9721-3 / Ammonium Hydroxide, 2.5 L	0000246506	10/14/2024	02/18/2020 / apatel	02/18/2020 / apatel	W2676

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	0330-500G / Cupric Sulfate Pentahydrate	CPECG2635	04/23/2025	04/23/2020 / apatel	04/23/2020 / apatel	W2697

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	x0027 / Xylene Cyanol FF, 25 gms	445BM-MO	06/08/2025	06/08/2020 / apatel	06/08/2020 / apatel	W2712

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	201089	06/30/2025	12/23/2020 / apatel	12/16/2020 / apatel	W2784

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC16721-3 / Isopropanol, 99%	C20F23007	06/23/2025	12/30/2020 / apatel	12/30/2020 / apatel	W2788

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	04667-2.5 / Silica Gel (60-200 mesh), 2.5 KG	010319	06/16/2026	09/01/2021 / jignesh	06/16/2021 / apatel	W2839

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	P1060-10 / PHENOL, ACS, 500G	M13H048	01/07/2026	07/07/2021 / apatel	07/07/2021 / apatel	W2858

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HACH	14863-98 / HACH NUTRIENT BUFFER PILLOW	A1316	01/31/2027	01/27/2022 / apatel	01/27/2022 / apatel	W2900

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	4620-32 / MANGANOUS SULFATE SOLUTION-364	2205851	04/30/2024	05/04/2022 / Iwona	05/04/2022 / apatel	W2913

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL04100-4 / Alkaline Iodide Azide, 1 L	2205f55	05/31/2024	05/25/2022 / Iwona	05/25/2022 / Iwona	W2914

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-7 / Sodium Hydroxide Pellets 12 Kg	7708-28	07/04/2024	01/30/2024 / Iwona	08/19/2022 / jignesh	W2942

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140730 / TEST PAPER,POT.IOD-STRCH,PK100,CS12	60799-008,260	09/19/2027	09/19/2022 / jignesh	09/19/2022 / jignesh	W2965

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL69870-8 / SODIUM THIOSULFATE,0.025N,4LITRE	4210G81	04/30/2024	11/15/2022 / Iwona	11/15/2022 / Iwona	W2976

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	AL70850-8 / Starch Solution, 4L	4210G90	10/31/2024	11/15/2022 / Iwona	11/15/2022 / Iwona	W2977

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	31390 / 1,5-Diphenylcarbazide	MKCR6636	12/09/2027	12/09/2022 / Iwona	12/09/2022 / Iwona	W2979

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3278-5 / Potassium Sulfate, 2.5 Kgs	SLCM9788	11/21/2027	11/21/2022 / Iwona	11/21/2022 / Iwona	W2983

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	JA630-5 / 4-aminoanti pyrine, 100 gm	50001601	01/31/2025	01/24/2023 / Iwona	01/24/2023 / Iwona	W3004

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	LC136757 / S-DIPHENYLCARBAZONE 10G	43031219	08/09/2028	08/09/2023 / Iwona	08/09/2023 / Iwona	W3049

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140444 / TEST PAPERS,PH 0-14,.5 SENSI,100PK	HC325179	09/26/2028	09/26/2023 / Iwona	09/25/2023 / Iwona	W3056

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	136742-80 / POLYSEED	152305	05/30/2025	02/15/2024 / Rubina	10/18/2023 / Iwona	W3059

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J9416-1 / Sodium Hypochlorite 500 ml	2312D77	06/30/2024	01/16/2024 / Iwona	01/16/2024 / Iwona	W3073

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	4705-1 / MERCURIC NITRATE, 0.0141 N 4L	4308L72	08/31/2025	01/17/2024 / Iwona	01/17/2024 / Iwona	W3075

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	23g1262009	08/30/2024	01/19/2024 / jignesh	01/19/2024 / jignesh	W3076

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	TCX0014-500ML / p-xylene	Y348K-RX	02/21/2029	02/21/2024 / Iwona	02/21/2024 / Iwona	W3080

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Certificate of Analysis

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2008 standard by SAI Global Certificate Number CERT - 0090918

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo 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 maintain DMF's with the FDA. The following are the actual analytical results obtained:

Catalog Number	**P243**	**Quality Test / Release Date 2/2/2018**	
Lot Number	**178879**		
Description	**POTASSIUM HYDROGEN PHTHALATE,ACIDIMETRIC STANDARD, A.C.S.**		
Country of Origin	**Spain**	*** Suggested Retest Date**	**Feb-2023**
Chemical Origin	**Organic - non animal**		
BSE/TSE Comment	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	White Crystals
ASSAY POTASSIUM HYDROGEN PHTHALATE	%	Inclusive Between 99.95 - 100.05	99.99
CHLORINE COMPOUNDS	%	<= 0.003	<0.0030
HEAVY METALS (as Pb)	ppm	<= 5	<5.0
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	0.0030
IRON (Fe)	ppm	<= 5	<5.0
PH OF 0.05M SOLUTION		Inclusive Between 4.00 - 4.02	4.01
SODIUM (Na)	%	<= 0.005	0.0020
SULFUR COMPOUNDS	%	<= 0.002	<0.0020
TRACEABLE TO NIST	RECORD	= LOT 351a	LOT 351a
TRACEABLE TO NIST KHP STD	RECORD	= LOT 84L	LOT 84L

Jerusa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above. If there are any questions with this certificate, please call (800) 227-6701.
*Based on suggested storage condition.

ISO 9001 CERTIFIED
ISO 13485 CERTIFIED

AMRESCO LLC
28600 Fountain Parkway
Solon, Ohio USA 44139
440/349-1199 FAX: 440/349-1182
www.amresco-inc.com
Email: info@amresco-inc.com

CERTIFICATE OF QUALITY / CERTIFICATE OF ANALYSIS

Potassium Ferricyanide

Code: **0713**

Chemical Formula:	K3Fe(CN)6	Manufacture Date:	(batch specific)
Molecular Weight:	329.25	Expiration/Reassay Date:	(batch specific)
CAS #:	13746-66-2		
Appearance:		Storage:	
Dark orange crystals		Grade:	ACS GRADE

Additional Information

TEST	SPECIFICATION	DISPOSITION
Chloride	<= 0.01 %	PASS
Ferro Compounds	<= 0.05 %	PASS
Insolubles	<= 0.005 %	PASS
Purity	>= 99.0 %	PASS
Sulfate	<= 0.01 %	PASS

Spec Set: 0713ACS

Analysis may have been rounded to significant digits in specification limits.

Product meets analytical specifications of the grades listed.

Internal ID #: 269

Signature: _____ **Date Printed:** 03/09/2016

Title:

Certificate of Analysis

Date of Release: ***12/18/2013***

Product: ***Ammonium Chloride GR ACS*** ***Catalog No.:*** ***AX1270 all size codes***

Grade: ***Meets ACS Specifications*** ***CAS #:*** ***12125-02-9***

Country of Origin: ***India*** ***FW:*** ***53.49***

Lot No.: ***WL13B*** ClH_4N

	Requirement			
Characteristic	**Minimum**	**Maximum**	**Results**	**UOM**
Assay (argentometric)	99.5		99.9	%
Calcium (Ca)		0.001	0.0001	%
Form	White crystals		White crystals	
Heavy metals (as Pb)		5	5	ppm
Identification	To pass test		Passes	
Insoluble matter		0.005	0.002	%
Iron (Fe)		2	2	ppm
Loss on drying (105 C)		0.5	0.21	%
Magnesium (Mg)		5	0.6	ppm
pH of a 5% solution at 25 C	4.5	5.5	4.76	
Phosphate (PO4)		2	2	ppm
Residue after ignition		0.01	0.002	%
Sulfate (SO4)		0.002	0.002	%

Joe Schoellkopff

Quality Control Manager

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EMD Millipore Corporation
290 Concord Road
Billerica, MA 01821

Certificate of Analysis

Date of Release: ***5/12/2014***

Product: ***Ammonium Chloride GR ACS*** ***Catalog No.:*** ***AX1270 all size codes***

Grade: ***Meets ACS Specifications*** ***CAS #:*** ***12125-02-9***

Country of Origin: ***India*** ***FW:*** ***53.49***

Lot No.: ***XE09B*** ClH_4N

Characteristic	Requirement Minimum	Maximum	Results	UOM
Assay (argentometric)	99.5		99.8	%
Calcium (Ca)		0.001	0.0001	%
Form	White crystals		White crystals	
Heavy metals (as Pb)		5	5	ppm
Identification	To pass test		Passes	
Insoluble matter		0.005	0.002	%
Iron (Fe)		2	2	ppm
Loss on drying (105 C)		0.5	0.22	%
Magnesium (Mg)		5	0.7	ppm
pH of a 5% solution at 25 C	4.5	5.5	4.95	
Phosphate (PO4)		2	2	ppm
Residue after ignition		0.01	0.002	%
Sulfate (SO4)		0.002	0.002	%

Joe Schoellkopff

Quality Control Manager

This document has been produced electronically and is valid without a signature.

EMD Millipore Corporation
290 Concord Road
Billerica, MA 01821

Sodium Chloride, Crystal
BAKER ANALYZED® A.C.S. Reagent

Material No.: 3624-05
Batch No.: 0000187425
Manufactured Date: 2017/08/03
Retest Date: 2024/08/01

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	>= 99.0 %	99.8
pH of 5% Solution at 25°C	5.0 - 9.0	5.8
ACS - Insoluble Matter	<= 0.005 %	0.003
Iodide (I)	<= 0.002 %	< 0.002
Bromide (Br)	<= 0.01 %	< 0.01
Chlorate and Nitrate (as NO_3)	<= 0.003 %	< 0.003
ACS - Phosphate (PO_4)	<= 5 ppm	< 5
Sulfate (SO_4)	<= 0.004 %	< 0.004
Barium (Ba)	Passes Test	PT
ACS - Heavy Metals (as Pb)	<= 5 ppm	< 5
Iron (Fe)	<= 2 ppm	< 2
Calcium (Ca)	<= 0.002 %	< 0.002
Magnesium (Mg)	<= 0.001 %	< 0.001
Potassium (K)	<= 0.005 %	< 0.005

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2008, 14001:2004, FSSC 22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, The Netherlands 9001:2008, 14001:2004, 13485:2003
Gliwice, Poland 9001:2008, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2008
Panoli, India 9001:2008

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600
Avantor Performance Materials, LLC.
3477 Corporate Parkway. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

SAI
SCIENTIFIC
ADSORBENTS
INCORPORATED
3342 International Park Dr., Atlanta, GA 30316
Tel: 678-904-6600 Fax: 678-904-6603 www.saisorb.com

Certificate of Analysis

Product Name:	Silica Gel
Catalog Number:	04667
Lot Number:	010319
Formula:	SiO_2
Molecular Weight:	60.08
Main Component:	Oxide of Silicon
Melting Point:	about 1730ºC
Color:	White
Physical Appearance:	Free Flowing Powder
Odor:	None
pH Value:	6.7 (5% aqueous slurry)
Bulk Density:	0.5 (g/ml)
Specific Surface Area	500-600 sq. m/gm
Particle Distribution:	< 63µm = 3.1% > 200µm = 0.4%
Mean Pore Diameter:	60Å
Water Soluble Matter	0.2 %
Toxicity:	non-toxic
Remarks:	Keep container closed

Measured according to the quality control methods of Scientific Adsorbents Inc., Atlanta, GA USA.

ThermoFisher SCIENTIFIC

Certificate of Analysis

Product No.: 13450

Product: Potassium dichromate, ACS, 99.0% min

Lot No.: T15F019

Test	Limits	Results
Appearance	Orange-red crystals	Orange-red crystals
Identification	To Pass	Passes
Purity	99.0 % min	99.67 %
Insoluble matter	0.005 % max	0.004 %
Loss on drying	0.05 % max	0.03 %
Chloride	0.001 % max	< 0.001 %
Sulfate	0.005 % max	< 0.005 %
Iron	0.001 % max	< 0.001 %
Calcium	0.003 % max	0.0012 %
Sodium	0.02 % max	0.0047 %

Certificate of Analysis List

For request number 1661869

Catalog Number Entered	Lot Number Entered	Related Catalog Number	Related Lot Code	Description
1486327	1316	1486398	1316	BOD Nutrient Buffer Pillows

Total Enclosures: 1

HACH COMPANY

P.O.Box 389
Loveland, CO 80539
(970) 669-3050

An ISO 9001 Certified Company

Certificate of Analysis

This is a Component of 1486398 lot A1316

COMMODITY:**BOD Nutrient Buffer Pillows**

COMMODITY NUMBER: **1486327**	MANUFACTURE DATE:	DATE OF ANALYSIS:
LOT NUMBER: **A1316**	**12/22/2021**	**1/5/2022**

TEST	*SPECIFICATIONS*	*RESULTS*
Ammonia Concentration of a diluted pillow	0.63 to 0.88 ppm	0.860 ppm
Calcium Concentration of a diluted pillow	0.71 to 0.99 ppm	0.940 ppm
Iron Concentration of a diluted pillow	0.42 to 0.56 ppm	0.479 ppm
Magnesium Concentration of a diluted pillow	0.27 to 0.37 ppm	0.340 ppm
Phosphorus Concentration of a diluted pillow	7.1 to 9.63 ppm	8.400 ppm
pH of the pillow in solution	7.1 to 7.6	7.13
Dissolved Oxygen Reagent Blank	-0.2 to 0.2 ppm	-0.10 ppm
Sterility	To Pass	Passed

The expiration date is Jan 2027

Certified by Scott Als

Scott Als
Analytical Services Chemist

RICCA CHEMICAL COMPANY®

1841 Broad Street
Pocomoke City, MD 21851
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

W2913 Received by AP on 5/4/22

Manganous Sulfate Solution, 364 g/L

Lot Number: 2205851 **Product Number:** 4620

Manufacture Date: MAY 02, 2022
Expiration Date: APR 2024

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sulfuric Acid	7664-93-9	ACS
Manganous Sulfate Monohydrate	10034-96-5	Reagent

Test	Specification	Result
Appearance	Pink liquid	Passed
Assay (by Refractive Index)	360-368 g/L	362 g/L

Specification	Reference
Manganous Sulfate Solution	ASTM (D 888 A)
Manganous Sulfate Solution	ASTM (D 888 A)
Manganous Sulfate Solution	APHA (4500-O E)
Manganous Sulfate Solution	APHA (4500-O F)
Manganous Sulfate Solution	APHA (4500-O D)
Manganous Sulfate Solution	APHA (4500-O E)
Manganous Sulfate Solution	APHA (4500-O F)
Manganous Sulfate Solution	APHA (4500-O D)
Manganous Sulfate Solution	APHA (4500-O C)
Manganous Sulfate Solution	APHA (4500-O C)
Manganous Sulfate Solution	EPA (360.2)
Manganous Sulfate Solution	EPA (360.2)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
4620-32	1 L natural poly	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Myrlande Gilles (05/02/2022)

Quality Control

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Sodium Bicarbonate, Powder
BAKER ANALYZED® A.C.S. Reagent

(sodium hydrogen carbonate)

Material No.: 3506-05
Batch No.: 0000240594
Manufactured Date: 2019/06/05
Retest Date: 2026/06/03
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($NaHCO_3$) (dried basis)	99.7 - 100.3 %	100.1
Insoluble Matter	<= 0.015 %	< 0.002
Chloride (Cl)	<= 0.003 %	0.003
Phosphate (PO_4)	<= 0.001 %	0.001
Sulfur Compounds (as SO_4)	<= 0.003 %	0.003
Calcium (Ca)	<= 0.02 %	0.02
Trace Impurities - Iron (Fe)	<= 0.001 %	0.001
Magnesium (Mg)	<= 0.005 %	0.005
Potassium (K)	<= 0.005 %	0.005
Ammonium (NH_4)	<= 5 ppm	5
Trace Impurities - ACS - Heavy Metals (as Pb)	<= 5 ppm	5

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US
Packaging Site: Paris Mfg Ctr & DC

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

spectrum® CHEMICAL MFG CORP

Certificate Of Analysis

Item Number	P1060	Lot Number	2HD0179
Item	Phenol, Loose Crystal, Reagent, ACS		
CAS Number	108-95-2		
Molecular Formula	C_6H_6O	Molecular Weight	94.11

Test	Specification		Result
	min	max	
ASSAY (C_6H_5OH)	99.0 %		100.02 %
FREEZING POINT (DRY)	40.5 C		40.5°C
CLARITY OF SOLUTION	TO PASS TEST		PASSES TEST
RESIDUE AFTER EVAPORATION		0.05 %	<0.05 %
WATER		0.5 %	0.0087 %
DATE OF MANUFACTURE			06-MAR-2018

Spectrum Chemical Mfg Corp
755 Jersey Avenue
New Brunswick 08901 NJ

Certificate Of Analysis Results Certified by

Ibad Tirmizi
Director of Quality
Spectrum Chemical Mfg. Corp.

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personnel only. It is the customer's responsibility to provide adequate hazardous material training and ensure that appropriate Personal Protective Equipment (PPE) is used before handling any chemical.

ThermoFisher SCIENTIFIC

Certificate of Analysis

W2858 Received by AP on 07/07/2021

Product No.: 33213

Product: Phenol, ACS, 99+%, stab.

Lot No.: M13H048

Test	Limits	Results
Assay	99.0 % min	99.8 %
Freezing point	40.5ºC min	40.5 ºC
Clarity of solution	To pass test	Passes
Residue after evaporation	0.05 % max	< 0.05 %
Water	0.5 % max	0.2 %

Retest date: January 7, 2026

Sodium Thiosulfate, 5-Hydrate, Crystal
BAKER ANALYZED® A.C.S. Reagent

Material No.: 3946-01
Batch No.: 0000209717
Manufactured Date: 2017/08/22
Retest Date: 2024/08/20
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ($Na_2S_2O_3 \cdot 5H_2O$) (by iodometry)	99.5 - 101.0 %	100.1
ACS - Insoluble Matter	<= 0.005 %	< 0.001
pH of 5% Solution at 25°C	6.0 - 8.4	7.7
Nitrogen Compounds (as N)	<= 0.002 %	0.002
Sulfate and Sulfite (as SO_4)	<= 0.1 %	0.1
Sulfide (S)	Passes Test	PT

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: JP
Packaging Site: Paris Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2015, FSSC22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2015, 13485:2012
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

ThermoFisher SCIENTIFIC

Certificate of Analysis

W2666 Recived on 02/10/2020 by AP

Product No.: 87683

Product: Sodium pentacyanonitrosylferrate(III) dihydrate, ACS, 99.0-102.0%

Lot No.: W12F013

Test	Limits	Results
Assay	99.0 - 102.0 %	99.67 %
Insoluble	0.01 % max	0.0079 %
Chloride	0.02 % max	Not detected
Sulfate	To pass test	Passes test
Aqueous solubility	To pass test	Passes test
Limit on Ferricyanide	To pass test	Passes test
Limit on Ferrocyanide	To pass test	Passes test

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Ammonium Hydroxide, 28.0-30.0%
BAKER ANALYZED® A.C.S. Reagent

Material No.: 9721-03
Batch No.: 0000246506
Manufactured Date: 2019/10/16
Retest Date: 2024/10/14
Revision No: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Appearance (Colorless and free from suspended matter or sediment)	Passes Test	PT
Assay (as NH_3)	28.0 - 30.0 %	28.4
Color (APHA)	<= 5	5
Specific Gravity at 60°/60°F	0.896 - 0.902	0.902
Residue after Ignition	<= 0.0020 %	< 0.0003
Carbon Dioxide (CO_2)	<= 0.002 %	< 0.001
Substances Reducing Permanganate	Passes Test	PT
Chloride (Cl)	<= 0.5 ppm	< 0.2
Nitrate (NO_3)	<= 2 ppm	< 1
Phosphate (PO_4)	<= 2 ppm	< 1
Sulfate (SO_4)	<= 2 ppm	< 1
Trace Impurities - Aluminum (Al)	<= 200.0 ppb	< 5.0
Arsenic and Antimony (as As)	<= 3000 ppb	< 5
Trace Impurities - Barium (Ba)	<= 300.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 50.0 ppb	< 5.0
Trace Impurities - Chromium (Cr)	<= 100.0 ppb	< 1.0
Trace Impurities - Copper (Cu)	<= 100.0 ppb	< 1.0
Trace Impurities - Gold (Au)	<= 200.0 ppb	< 5.0
Heavy Metals (as Pb)	<= 500 ppb	< 100
Trace Impurities - Iron (Fe)	<= 100.0 ppb	< 1.0
Trace Impurities - Lead (Pb)	<= 200.0 ppb	< 10.0
Trace Impurities - Magnesium (Mg)	<= 200.0 ppb	< 1.0
Trace Impurities - Manganese (Mn)	<= 100.0 ppb	< 1.0

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

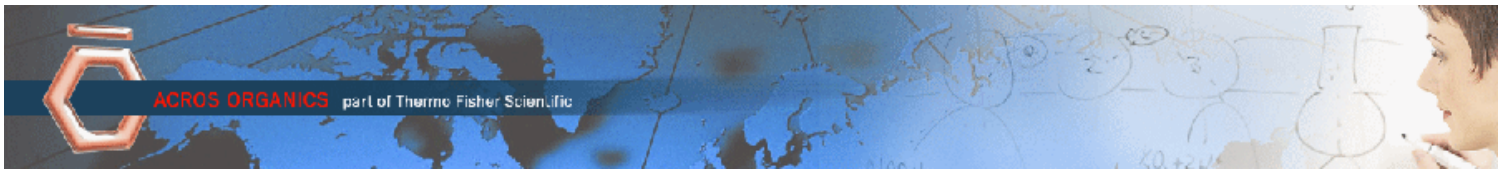
Material No.: 9721-03
Batch No.: 0000246506

Test	Specification	Result
Trace Impurities - Nickel (Ni)	<= 100.0 ppb	< 5.0
Trace Impurities - Tin (Sn)	<= 100.0 ppb	< 10.0
Trace Impurities - Titanium (Ti)	<= 100.0 ppb	< 1.0
Trace Impurities - Zinc (Zn)	<= 100.0 ppb	< 1.0

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700



ACROS ORGANICS

Version	0
Molecular weight	147.13
Molecular formula	C5 H9 N O4
CAS No	56-86-0
Linear formula	HO2CCH2CH2CH(NH2)CO2H
Flash point (°C)	

Certificate of Analysis

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Catalog Number	15621	**Quality Test / Release Date**	13 March 2019
Lot Number	A0405990	**Suggested Retest Date**	March 2022

Description	L(+)-Glutamic acid,99%
Country of Origin	CHINA
Declaration of Origin	plant

Origin Comment	The product is made by fermentation of sugar molasses

Result Name	Specifications	Test Value
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Infrared spectrum	Conforms	Conforms
Titration with NaOH	98.5 to 100.5 % (On dried substance)	99.32 % (On dried substance)
Loss on drying	=<0.5 % (105°C, 3 hrs)	0.002 % (105°C, 3 hrs)
Heavy metals (as Pb)	=<10 ppm	=<10 ppm
Sulfated ash	=<0.1 %	0.08 %
Other amino acids	not detectable	not detectable
Specific optical rotation	+30.5° to +32.5° (20°C, 589 nm) (on dried substance)	+32° (20°C, 589 nm) (on dried substance)
Specific optical rotation	(c=10, 2N HCl)	(c=10, 2N HCl)
Chloride (Cl)	=<200 ppm	=<200 ppm
Iron (Fe)	=<30 ppm	=<10 ppm
Sulfate (SO4)	=<300 ppm	=<200 ppm
Ammonium (NH4)	=<200 ppm	=<200 ppm
Arsenic oxide (As2O3)	=<1 ppm	=<1 ppm

L. Van den Broek, QA Manager Issued: 24 January 2020

Acros Organics
ENA23, zone 1, nr 1350, Janssen Pharmaceuticalaan 3a, B-2440 Geel, Belgium
Tel +32 14/57.52.11 - Fax +32 14/59.34.34 Internet: http://www.acros.com
1 Reagent Lane, Fair Lawn, NJ 07410,USA Fax 201-796-1329

CERTIFICATE OF ANALYSIS

Product Name	ISOPROPYL ALCOHOL, 99%
Grade	Meets ACS/USP/NF Monographs
Catalog #	231000099, zp231000099
Lot #	C20F23007
Date of Manufacture:	06/23/20
Recommended Retest Date:	Five Years from Date of Manufacture

W2788 Received on 12/30/2020 by AP

TEST	MONO GRAPH	SPECIFICATION	RESULT
Assay (corrected for water)	USP	99.0% min	99.92%
Assay (corrected for water)	ACS	99.5% min	
Solubility in water	ACS+	To Pass Test	Pass
Appearance	ACS+	Clear, colorless liquid	Pass
Color, APHA	ACS	10 max	1
Limit of Nonvolatile Residue	USP+	NMT 2.5 mg (0.005%)	0.1 mg
Residue after Evaporation	ACS+	0.001% max	< 0.001%
Specific Gravity	USP	0.783 - 0.787 @25°C	0.783
Identification A - Infrared Absorption	USP	To Pass Test	Pass
Identification B	USP	To Pass Test	Pass
Refractive Index @ 20°C	USP	1.376-1.378	1.377
Acidity	USP+	NMT 0.70 ml of 0.020N NaOH is required	0.30 mL
Titrable Acid or Base	ACS+	0.0001 meq/g max	0.0001 meq/g
Carbonyl Compounds	ACS	Propionaldehyde 0.002% max	< 0.002%
		Acetone 0.002% max	None Detected
Limit of Volatile Impurities	USP	Diethyl Ether NMT 0.1%	< 0.1%
		Acetone NMT 0.1%	None Detected
		Diisopropyl Ether NMT 0.1%	< 0.1%
		n-Propyl Alcohol NMT 0.1%	< 0.1%
		2-Butanol NMT 0.1%	< 0.1%
		Total NMT 1.0%	< 0.1%
Water, wt%	ACS	NMT 0.2%	0.05%
Water Determination	USP	NMT 0.5%	

+ This test is performed quarterly

58 Vale Road, Brookfield, Connecticut, 06804, USA | P. 800.243.5360
www.pharmco.com | www.greenfield.com

Certification and Compliance Statements

This lot of Isopropyl Alcohol complies with all of the current requirements listed in the United States Pharmacopeia, American Chemical Society monographs and the National Formulary.
No chemicals whatsoever are used as solvents at any point in the manufacture, processing or packaging of Isopropyl Alcohol. Only Class 2 and Class 3 residual solvents may appear as impurities / related substances / low level contaminants in IPA Concentration of Class 2 Option 1 and Class 3 residual solvents is below limits in the current USP/NF General Chapter <467>.
This product is not derived, nor does it come in contact with, any materials derived from bovine or other animal sources.
This product is for further commercial manufacturing, laboratory or research use, and may be used as an excipient or a process solvent for pharmaceutical purposes. It is not intended for use as an active ingredient in drug manufacturing nor as a medical device or disinfectant. Appropriate/legal use of this product is the responsibility of the user.

Approved by: D. Simoncelli, Quality Control Chemist

Date of Approval: 06/23/2020

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www.pharmco.com | www.greenfield.com

Sigma-Aldrich.

~~H2278~~ W2983

Rec. 11/21/22 ,2

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
Potassium sulfate - ReagentPlus®, ≥99.0%

Product Number:	**P0772**
Batch Number:	**SLCM9788**
Brand:	SIGALD
CAS Number:	7778-80-5
MDL Number:	MFCD00011388
Formula:	K2O4S
Formula Weight:	174.26 g/mol
Quality Release Date:	03 MAR 2022

K_2SO_4

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Solubility (Color)	Colorless	Colorless
Solubility (Turbidity) 10 g plus 150 mL, H2O	Clear	Clear
Titration with NaOH	≥ 99.0 %	99.2 %

Brian Dulle

Brian Dulle, Supervisor
Quality Assurance
St. Louis, Missouri US

BEANTOWN CHEMICAL

W3004
Rec. 01/24/23
12

Certificate of Analysis

Catalog Number	212760
Product Description	4-Aminoantipyrine, 97%
CAS Number	83-07-8
Lot Number	50001601

Test Results

	Specifications	Results
Assay	≥97.0% min	98.2%
Identification	To pass test	Passes test
Melting Point	107-109°C	109°C
Sensitivity to phenol	To pass test	Passes test
Residue after Ignition	≤0.10%	0.03%
Loss on drying	≤0.5%	0.13%
Clarity of solution (1g/20ml water)	Clear solution	Clear solution
Clarity of solution (1g/20ml EtOH)	Clear solution	Clear solution
Description	Light yellow to tan fine crystals	Light yellow crystalline powder

Suggested retest date January 2025

This certificate of analysis has been electronically generated and is valid without a signature.

BEANTOWN CHEMICAL CORPORATION, 9 SAGAMORE PARK ROAD, HUDSON NH 03051

WWW.BEANTOWNCHEM.COM TOLL FREE: 1-844-891-6306 EMAIL: TECHNICAL@BEANTOWNCHEM.COM

N3049
rec. 08/09/23
12

LabChem
Part of TCP Analytical Group
Jackson's Pointe Commerce Park- Building 1000
1010 Jackson's Pointe Court, Zelienople, PA 16063

Certificate of Analysis

Diphenylcarbazone ACS

Product Code: **LC136757**

Manufacture Date: March 16, 2023

Lot Number: **43031219**

Test	Specification	Result
Appearance (color)	orange	orange
Residue after ignition	<= 0.1 %	<0.1%
Sensitivity	To pass test	Passes
Solubility in acetone	To pass test	Passes

Intended Use *- Product is intended for use in manufacturing procedures and laboratory procedures and protocols.*

Storage Information *- Unless noted on the product label, store the product under normal lab conditions in its tightly closed original container. Do not pipet directly from the container or return unused portions to the container.*

Instructions for Handling and Use *- Please refer to the associated product label and Safety Data Sheet (SDS) for informa regarding safety and handling of this product.*

Preparation *- All products are manufactured and tested according to established, documented procedures and methodology Production documentation records manufacturing data, raw material traceability and testing history on a per lot basis. Balance thermometers, and glassware are calibrated before first use and on a regular schedule with references traceable to NIST standards.*

Michael Monteleone

Quality Control
Michael Monteleone
Chemistry Supervisor
20230810 15:29:36 TWalker-0.0

ISO 9001:2015 Registration #0306-01

W 3059
rec. 10/18/23 12

POLYSEED®

CERTIFICATE OF ANALYSIS

PO BOX 130549 Spring, TX 77393
Phone: (281) 298-9410 Fax: (281) 298-9411

FINISHED PRODUCT, LOT NUMBER, MFG. /EXP DATE:
PolySeed® • Part No. P-110 • Lot 152305 • Mfg. Date: 05/2023 • Exp. Date: 05/2025

FORMULATION:
The formulation for this product contains a range of naturally occurring microorganisms, which are known to be non-pathogenic to man or animals.

VIABLE COUNT, FINAL TEST RESULT:
The product has been fully tested in accordance with Finished Product Specifications and contains a minimum viable count of 4.00 x10^9 cfu/g.

GLUCOSE/GLUTAMIC-ACID RESULTS:
Tested results within acceptable range 198 +/- 30.5 mg/L (167.5 - 228.5 mg/L). GGA Lot# L257-09 – Average Test Result: 203.4

See www.polyseed.com for details.

SEED CONTROL FACTOR:
Tested results within acceptable range 0.6 – 1.0 see www.polyseed.com for details

SALMONELLA TEST RESULT:
The product has been shown to be Salmonella negative using procedures recommended in the Microbiology Laboratory Guidebook, published by the USDA Food Safety and Inspection Service.

The purpose of this document is to assure that the Finished Product conforms to the above specification.

Signature: _____ Date: 05/15/2023
Quality Control Department

POLYSEED.Ref.1.19 Revised Jan 23

InterLab®
International Laboratory Supply

ISO 9002
DNV
DNV Certification, Inc.
REGISTERED FIRM

W2712 Received on 06/08/2020 by AP

Certificate of Analysis

06/08/2020(JST)

TOKYO CHEMICAL INDUSTRY CO.,LTD.
4-10-1 Nihonbashi-Honcho, Chuo-ku, Tokyo 103-0023 Japan

Chemical Name: Xylene Cyanol FF		
Product Number: X0027 CAS RN: 2650-17-1	Lot: 445BM	

Tests	Results	Specifications
Appearance	Deep green powder	Green to Dark green powder to crystal
Lambda max.	613.5	613.0 to 616.0 nm(H2O)
Absorbance(E1%1cm)	999(613.5 nm)	min. 950(H2O, 613.0 to 616.0 nm)

TCI Lot numbers are 4-5 characters in length. Characters listed after the first 4-5 characters are control numbers for internal purpose only.
The contents of the specifications are subject to change without advance notice. The specification values displayed here are the most up to date values. There may be cases where the product labels display a different specification, however, the product quality still meets the latest specification.

Customer Service:

TCI AMERICA
Tel: +1-800-423-8616 / +1-503-283-1681
Fax: +1-888-520-1075 / +1-503-283-1987
E-mail: Sales-US@TCIchemicals.com

Takuya Nishioka
Quality Assurance Department Manager

ThermoFisher SCIENTIFIC

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120632

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	D16	Quality Test / Release Date	03/19/2019
Lot Number	186122A		
Description	DEXTROSE, ANHYDROUS, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Mar/2022
Chemical Origin	Organic - Plant		
BSE/TSE Comment	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.		
Chemical Comment			

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	White, granular powder
TITRATABLE ACID	MEQ/G	<= 0.002	<0.002
STARCH		= PASS TEST	pass test
SPECIFIC ROTATION @ 25 C	DEGREES (+ OR -)	Inclusive Between +52.5 - +53.0	53.0
SULFATE & SULFITE	%	<= 0.005	<0.005
IRON (Fe)	ppm	<= 5	<5
CHLORIDE	%	<= 0.01	<0.01
IGNITION RESIDUE	%	<= 0.02	<0.02
IDENTIFICATION	PASS/FAIL	= PASS TEST	pass test
HEAVY METALS (as Pb)	ppm	<= 5	<5
LOSS ON DRYING @ 105 C	%	<= 0.2	<0.2
INSOLUBLE MATTER	%	<= 0.005	0.002

Teresa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

ThermoFisher SCIENTIFIC

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

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Catalog Number	P188	Quality Test / Release Date	08/12/2019
Lot Number	194664		
Description	POTASSIUM DICHROMATE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Aug/2024
Chemical Origin	Inorganic-non animal		
BSE/TSE Comment	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.		
Chemical Comment			

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Fine, orange-red crystals
ASSAY	%	>= 99	99.2
CALCIUM	%	<= 0.003	<0.003
CHLORIDE	%	<= 0.001	<0.001
LOSS ON DRYING @ 105 C	%	<= 0.05	<0.05
SULFATE (SO4)	%	<= 0.005	<0.005
INSOLUBLE MATTER	%	<= 0.005	0.003
IRON (Fe)	%	<= 0.001	<0.001
SODIUM (Na)	%	<= 0.02	<0.02
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST

Teresa Bailey-Wyche

Quality Assurance Specialist - Certificate of Analysis Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

ThermoFisher SCIENTIFIC

Certificate of Analysis

1 Reagent Lane
Fair Lawn, NJ 07410
201.796.7100 tel
201.796.1329 fax

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This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	P243	Quality Test / Release Date	06/19/2020
Lot Number	201089		
Description	POTASSIUM HYDROGEN PHTHALATE,ACIDIMETRIC STANDARD, A.C.S.		
Country of Origin	Spain	Suggested Retest Date	Jun/2025
Chemical Origin	Organic - non animal		
BSE/TSE Comment	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.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	WHITE CRYSTALS
ASSAY POTASSIUM HYDROGEN PHTHALATE	%	Inclusive Between 99.95 - 100.05	100.03
CHLORINE COMPOUNDS	%	<= 0.003	<0.003
HEAVY METALS (as Pb)	ppm	<= 5	<5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	<0.005
IRON (Fe)	ppm	<= 5	<5
PH OF 0.05M SOLUTION		Inclusive Between 4.00 - 4.02	4.00
SODIUM (Na)	%	<= 0.005	<0.005
SULFUR COMPOUNDS	%	<= 0.002	<0.002%
TRACEABLE TO NIST	SOD CARBONATE	= LOT 351a	351a
TRACEABLE TO NIST KHP STD	POT. ACID PHTHALATE	= LOT 84L	84L

Julian Burton

Julian Burton - Quality Control Manager – Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.
If there are any questions with this certificate, please call at (800) 227-6701.
*Based on suggested storage condition.

Allan Chemical Corporation

235 Margaret King Avenue
Ringwood NJ 07456

Telephone: 973-962-4014
Fax: 973-962-6820
E-Mail: allanchem@allanchem.com

W2697

ATTN: ALLAN CHEMICAL - QC DEPT.
DATE: September 20, 2021
P.O. #: 14410
PART #: N/A
LOT #: CPECG2635

CERTIFICATE OF ANALYSIS

CUPRIC SULFATE CRYSTAL – ACS GRADE

ASSAY:	102.0 %
LEAD:	< 0.0001 %
NITROGEN COMPOUNDS:	< 0.001 %
ZINC:	< 0.0001 %
INSOLUBLE MATTER:	< 0.001 %
CHLORIDE:	< 0.001 %
CHROMIUM:	< 0.00002 %
IRON:	0.0003 %
NICKEL:	< 0.0001 %
CADMIUM:	< 0.0001 %
MANGANESE:	< 0.0001 %
CALCIUM:	< 0.005 %
POTASSIUM:	< 0.001 %
SODIUM:	< 0.001 %

PRODUCTOS QUIMICOS MONTERREY, S.A. DE C.V.

MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MEXICO
CP 64070
TEL +52 81 13 52 57 57
www.pqm.com.mx

CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na_2SO_4
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_4)	Min. 99.0%	99.7 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.1
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO_4)	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.003 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.1 %
Retained on US Standard No. 60 sieve	Min. 94%	97.3 %
Through US Standard No. 60 sieve	Max. 5%	2.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %

COMMENTS

QC: PhC Irma Belmares

If you need further details, please call our factory or contact our local distributor.

Recd. by RB on 7/24/23 E3551

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker®

Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H_2O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by KP on 03/01/24

E 3708

Ken Koehnlein
Sr. Manager, Quality Assurance

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

M5037-38-39-40
ND

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 0000250349
Manufactured Date: 2019/12/17
Retest Date: 2024/12/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (H_2SO_4)	95.0 - 98.0 %	96.5
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Substances Reducing Permanganate (as SO_2)	<= 2 ppm	< 2
Ammonium (NH_4)	<= 1 ppm	< 1
Chloride (Cl)	<= 0.1 ppm	< 0.1
Nitrate (NO_3)	<= 0.2 ppm	< 0.1
Phosphate (PO_4)	<= 0.5 ppm	< 0.1
Trace Impurities - Aluminum (Al)	<= 30.0 ppb	0.2
Arsenic and Antimony (as As)	<= 4 ppb	< 2
Trace Impurities - Barium (Ba)	<= 10.0 ppb	< 1.0
Trace Impurities - Beryllium (Be)	<= 10.0 ppb	< 1.0
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 10.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 2.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	2.9
Trace Impurities - Chromium (Cr)	<= 6.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 0.5 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 10.0 ppb	< 1.0
Trace Impurities - Germanium (Ge)	<= 10.0 ppb	< 10.0
Trace Impurities - Gold (Au)	<= 10.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 500 ppb	< 100

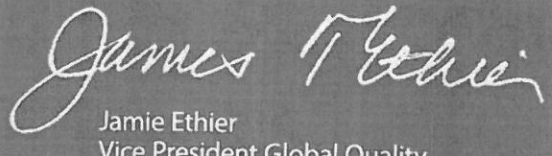
For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Material No.: 9673-33
Batch No.: 0000250349

Test	Specification	Result
Trace Impurities - Iron (Fe)	<= 50.0 ppb	4.1
Trace Impurities - Lead (Pb)	<= 0.5 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 10.0 ppb	< 1.0
Trace Impurities - Magnesium (Mg)	<= 7.0 ppb	0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	< 0.1
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 2.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 10.0 ppb	< 1.0
Trace Impurities - Potassium (K)	<= 500.0 ppb	< 2.0
Trace Impurities - Selenium (Se)	<= 50.0 ppb	22.9
Trace Impurities - Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 500.0 ppb	2.7
Trace Impurities - Strontium (Sr)	<= 5.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 10.0 ppb	< 5.0
Trace Impurities - Thallium (Tl)	<= 20.0 ppb	< 5.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 10.0 ppb	< 1.0
Trace Impurities - Vanadium (V)	<= 10.0 ppb	< 1.0
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 10.0 ppb	< 1.0

For Laboratory, Research or Manufacturing Use

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC



Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

M5210 - M5217
MB

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 22D0862014
Manufactured Date: 2022-02-23
Retest Date: 2027-02-22
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS - Assay (H_2SO_4)	95.0 - 98.0 %	96.5 %
Appearance	Passes Test	Passes Test
ACS - Color (APHA)	≤ 10	5
ACS - Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS - Substances Reducing Permanganate (as SO2)	≤ 2 ppm	< 2 ppm
Ammonium (NH_4)	≤ 1 ppm	< 1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO_3)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO_4)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities - Aluminum (Al)	≤ 30.0 ppb	1.7 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities - Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities - Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities - Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities - Gold (Au)	≤ 10.0 ppb	< 0.2 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities - Iron (Fe)	≤ 50.0 ppb	2.0 ppb
Trace Impurities - Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities - Magnesium (Mg)	≤ 7.0 ppb	0.6 ppb
Trace Impurities - Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities - Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities - Nickel (Ni)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities - Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities - Selenium (Se)	≤ 50.0 ppb	12.1 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	4.4 ppb
Trace Impurities - Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 22D0862014

Test	Specification	Result
Trace Impurities - Sodium (Na)	≤ 500.0 ppb	6.2 ppb
Trace Impurities - Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.6 ppb

For Laboratory,Research,or Manufacturing Use

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier

Jamie Ethier
Vice President Global Quality

PO: 220504-03 PRODUCT CODE: SHIP DATE: 8/19/2022

Sodium Hydroxide, Pellet
AR® (ACS)

avantor™ | MACRON FINE CHEMICALS™

W2942
Rec Date: - 08/19/22 KS

Material No.: 7708-28
Batch No.: 22A0462005
Manufactured Date: 2022-01-04
Expiration Date: 2024-07-04
Revision No.: 1

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (NaOH) (by acidimetry)	≥ 98 %	98 %
Identification	Passes Test	Passes Test
Calcium (Ca)	≤ 0.005 %	< 0.005 %
Chloride (Cl)	≤ 0.005 %	< 0.005 %
Copper (Cu)	≤ 0.001 %	< 0.001 %
Heavy Metals (as Ag)	≤ 0.001 %	< 0.001 %
Insoluble Matter	≤ 0.003 %	< 0.002 %
Iron (Fe)	≤ 0.0003 %	< 0.0002 %
ACS – Magnesium (Mg)	≤ 0.002 %	< 0.002 %
Mercury (Hg)	≤ 0.1 ppm	< 0.1 ppm
Nickel (Ni)	≤ 0.0005 %	< 0.0005 %
Nitrogen Compounds (as N)	≤ 0.0003 %	< 0.0003 %
Phosphate (PO_4)	≤ 0.0002 %	< 0.0001 %
Potassium (K)	≤ 0.02 %	0.01 %
Sodium Carbonate (Na_2CO_3)	≤ 0.4 %	0.4 %
ACS – Sulfate (SO_4)	≤ 0.003 %	< 0.003 %

PO: 220504-03 PRODUCT CODE: SHIP DATE: 8/19/2022

Sodium Hydroxide, Pellet
AR® (ACS)

avantor™ | MACRON FINE CHEMICALS™

Material No.: 7708-28
Batch No.: 22A0462005

Test	Specification	Result

For Laboratory,Research,or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Appearance (white hygroscopic pellets)

Country of Origin: Sweden
Packaging Site: Phillipsburg Mfg Ctr & DC

James T Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

RICCA CHEMICAL COMPANY®

1490 Lammers Pike
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

W2976 Rec. 11/15/22

Certificate of Analysis

Sodium Thiosulfate, 0.0250 Normal (N/40)

Lot Number: 4210G81 **Product Number:** 7900

Manufacture Date: OCT 17, 2022
Expiration Date: APR 2024

This product is specially formulated to increase its stability. A preservative is added to prevent bacterial contamination. However, all Sodium Thiosulfate solutions are subject to slow chemical deterioration and should be restandardized periodically.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Sodium Thiosulfate Pentahydrate	10102-17-7	ACS
Organic Preservative	Proprietary	
Sodium Carbonate	497-19-8	ACS

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Assay (vs. Potassium Iodate/Starch)	0.02499-0.02501 N at 20°C	0.02500 N at 20°C	136

Specification	Reference
Standard Sodium Thiosulfate Solution, 0.0250 N	APHA (4500-S2- F)
Standard Sodium Thiosulfate Titrant	APHA (4500-O D)
Standard Sodium Thiosulfate Titrant	APHA (4500-O E)
Standard Sodium Thiosulfate Titrant	APHA (4500-O F)
Standard Sodium Thiosulfate Titrant, 0.025 N	APHA (4500-Cl B)
Standard Sodium Thiosulfate Titrant	APHA (4500-O C)
Standard Sodium Thiosulfate Titrant, 0.025 M	APHA (5530 C)
Standard Sodium Thiosulfate Solution (0.025 N)	EPA (SW-846) (9031)
Standard Sodium Thiosulfate solution (0.025 N)	EPA (SW-846) (9034)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
7900-1	4 L natural poly	18 months
7900-16	500 mL natural poly	18 months
7900-5	20 L Cubitainer®	18 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Paul Brandon (10/17/2022)
Production Manager
This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

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W2977 Rec 11/15/22

Certificate of Analysis

Starch Indicator, 0.5% (w/v), Mercury Free, for Iodometric Titrations

Lot Number: 4210G90 **Product Number:** 8000

Manufacture Date: OCT 17, 2022
Expiration Date: OCT 2024

This product is Mercury-free.

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Starch, soluble	9005-84-9	ACS
Salicylic Acid	69-72-7	ACS

Test	Specification	Result
Appearance	White translucent liquid	Passed
Suitability for Use	Colorless (Iodine absent) - Blue (Iodine present)	Passed

Specification	Reference
Starch Solution	APHA (4500-S2- F)
Starch Indicator Solution	APHA (4500-Cl B)
Starch Indicator	APHA (4500-SO32- B)
Starch indicator solution	APHA (2350 B)
Starch indicator solution	APHA (2350 E)
Starch Solution	APHA (510 B)
Starch Solution	APHA (5530 C)
Starch Indicator	APHA (4500-Cl C)
Starch Indicator	EPA (345.1)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
8000-1	4 L natural poly	24 months
8000-5	20 L Cubitainer®	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Paul Brandon (10/17/2022)
Production Manager
This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Sigma-Aldrich.

W 2979

Rec: 12/08/22

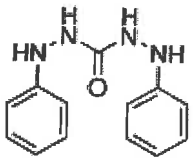
exp. 12/08/27

3050 Spruce Street, Saint Louis, MO 63103, USA
Website: www.sigmaaldrich.com
Email USA: techserv@sial.com
Outside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:
1,5-Diphenylcarbazide - ACS reagent

Product Number:	**259225**
Batch Number:	**MKCR6636**
Brand:	SIAL
CAS Number:	140-22-7
MDL Number:	MFCD00003013
Formula:	C13H14N4O
Formula Weight:	242.28 g/mol
Quality Release Date:	02 JUN 2022



Test	Specification	Result
Appearance (Color) Off-White to Pink, Light Purple or Tan	Conforms to Requirements	Pink
Appearance (Form)	Powder or Chunks	Powder
Melting Point	173.0 - 176.0 °C	173.0 °C
Infrared Spectrum	Conforms to Structure	Conforms
Residue on ignition (Ash) 15 minutes, 800 Degrees Celsius	≤ 0.05 %	0.01 %
Solubility	Pass	Pass
Sensitivity Test	Pass	Pass
Meets ACS Requirements	Current ACS Specification	Conforms

Larry Coers, Director
Quality Control
Milwaukee, WI US

RICCA CHEMICAL COMPANY®
W3073 Rec. on 01/16/24 by IZ

1841 Broad Street
Pocomoke City, MD 21851
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Sodium Hypochlorite Solution, 5% available Chlorine

Lot Number: 2312D77 **Product Number:** 7495.5

Manufacture Date: DEC 08, 2023
Expiration Date: JUN 2024

This solution is subject to slow decomposition upon exposure to air. Keep container tightly capped. Refrigeration may improve stability.
When used in the Phenate method for Ammonia, APHA recommends replacing this solution about every 2 months.

Name	CAS#	Grade
Water	7732-18-5	Commercial
Sodium Hypochlorite	7681-52-9	Commercial

Test	Specification	Result	NIST SRM#
Appearance	Colorless to greenish-yellow liquid	Passed	
Assay (vs. Sodium Thiosulfate/Starch)	4.75-5.25 % (w/w) Cl_2	5.24 % (w/w) Cl_2	136

Specification	Reference
Sodium Hypochlorite, 5%	APHA (4500-NH3 F)
Sodium Hypochlorite	ASTM (D 4785)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
7495.5-1	4 L black poly	6 months
7495.5-16	500 mL amber poly	6 months
7495.5-32	1 L amber poly	6 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Jose Pena (12/08/2023)
Operations Manager
This document is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

RICCA CHEMICAL COMPANY®

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W3075 Rec. on 01/17/24 by IZ

Certificate of Analysis

Mercuric Nitrate, 0.0141 Normal, 0.00705 Molar, 1 mL = 0.5 mg Cl^-

Lot Number: 4308L72 **Product Number:** 4705

Manufacture Date: AUG 17, 2023
Expiration Date: AUG 2025

Name	CAS#	Grade
Water	7732-18-5	ACS/ASTM/USP/EP
Mercuric Nitrate Monohydrate	7783-34-8	ACS
Nitric Acid	7697-37-2	ACS

Test	Specification	Result	NIST SRM#
Appearance	Colorless liquid	Passed	
Assay (vs. Potassium Chloride/Diphenylcarbazone)	0.01409-0.01411 N at 20°C	0.01410 N at 20°C	999

Specification	Reference
Standard Mercuric Nitrate Titrant, 0.00705 M (0.0141 N)	APHA (4500-Cl- C)
Mercuric nitrate, 0.0141 N	TAPPI (T 256 cm-97)
Mercuric Nitrate Titrant (0.0141 N)	EPA (325.3)

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Part Number	Size / Package Type	Shelf Life (Unopened Container)
4705-1	4 L amber glass	24 months
4705-16	500 mL amber glass	24 months
4705-32	1 L amber glass	24 months

Recommended Storage: 15°C - 30°C (59°F - 86°F)

Paul Brandon (08/17/2023)
Production Manager

This document is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Hexanes (95% n-hexane)
BAKER RESI-ANALYZED® Reagent

avantor™ | J.T.Baker®

W 3076
TS opened 01.24.2024

Certificate of Analysis

Material No.: 9262-03
Batch No.: 23G1262009
Manufactured Date: 2023-06-01
Expiration Date: 2024-08-30
Revision No.: 0

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	3
Assay (Total Saturated C_6 Isomers) (by GC, corrected for water)	≥ 99.5 %	99.6 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	98 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Darkened by H_2SO_4	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein
Sr. Manager, Quality Assurance

W3080 Received on 2/21/2024 by IZ

Certificate of Analysis

02/21/2024(JST)

TOKYO CHEMICAL INDUSTRY CO.,LTD.
T-PLUS Nihonbashi-Kodemmacho
16-12 Nihonbashi-kodemmacho, Chuo-ku, Tokyo 103-0001, Japan

Chemical Name: ***p*-Xylene**		
Product Number: X0014 CAS RN: 106-42-3	Lot: Y348K	

Tests	Results	Specifications
Appearance	Colorless clear liquid	Colorless to Almost colorless clear liquid
Purity(GC)	99.7 %	min. 99.0 %

TCI Lot numbers are 4-5 characters in length. Characters listed after the first 4-5 characters are control numbers for internal purpose only.
The contents of the specifications are subject to change without advance notice. The specification values displayed here are the most up to date values. There may be cases where the product labels display a different specification, however, the product quality still meets the latest specification.

Customer Service:

TCI AMERICA
Tel: +1-800-423-8616 / +1-503-283-1681
Fax: +1-888-520-1075 / +1-503-283-1987
E-mail: Sales-US@TCIchemicals.com

Takuya Nishioka
Quality Assurance Department Manager

CHEMTECH

SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 • Fax (908) 789-8922
www.chemtech.net

CHEMTECH PROJECT NO.
QUOTE NO. P1747
COC Number 2043853

CLIENT INFORMATION

REPORT TO BE SENT TO:
COMPANY: LiRo Engineers, Inc.
ADDRESS: 703 Fourimer street
CITY Brooklyn STATE: NY ZIP: 11211
ATTENTION: Steve Frank / Amy Hewson
PHONE: 716 882-5476 FAX:

CLIENT PROJECT INFORMATION

PROJECT NAME: Walter Gladwin Park Rec. Center
PROJECT NO.: 19-294-0265.01 LOCATION: Bronx, NY
PROJECT MANAGER: Steve Frank
e-mail: franks@liro-hill.com
PHONE: 716 882-5476 FAX:

CLIENT BILLING INFORMATION

BILL TO: PO#:
ADDRESS: Same
CITY STATE: ZIP:
ATTENTION: PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: 5 day TAT DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- [x] Level 1 (Results Only)
- [ ] Level 2 (Results + QC)
- [ ] Level 3 (Results + QC + Raw Data)
- [ ] Level 4 (QC + Full Raw Data)
- [ ] NJ Reduced
- [ ] US EPA CLP
- [ ] NYS ASP A
- [ ] NYS ASP B
- [ ] Other
- [ ] EDD FORMAT

ANALYSIS

1 TCL VOCs
2 SVOCs
3 PCBs
4 Pesticides
5 TAL metals *
6
7 NYCDEP Sanitary or Combined Sewer Discharge Parameters
8
9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# OF BOTTLES	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
								A	D	B							← Specify Preservatives A-HCl D-NaOH B-HN03 E-ICE C-H2SO4 F-OTHER
1.	MW-01	GW		X	3/12/24	0800	7	X	X	X	X	X					
2.	MW-01 DUP	GW		X	↓	0830	7	X	X	X	X	X					
3.	MW-01	GW		X	3/13/24	1000	14							X	X		
4.	MW-02	GW		X	3/12/24	1200	7	X	X	X	X	X					
5.	TWP-04	GW		X	↓	1100	7	X	X	X	X	X					
6.	Trip Blank #1	DI Water		X	—	—	2	X									
7.																	
8.																	
9.																	
10.																	

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE/TIME:	RECEIVED BY:
1. Eva Hu	3/13/24 1220	1. 3-13-24
2.		2.
3.	3-13-24 1630	3.

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 3.4 °C
Comments: * TAL Metals (Filtered & Unfiltered)

Page 1 of 1
CLIENT: ☐ Hand Delivered ☐ Other
CHEMTECH: ☑ Picked Up ☐ Field Sampling
Shipment Complete ☐ YES ☐ NO

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT YELLOW - CHEMTECH COPY PINK - SAMPLER COPY

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2022022
Maryland	296
New Hampshire	255423
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-23-16

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID : P1747 LIRO01
Client Name : LiRo Engineers, Inc.
Client Contact : Steve Frank
Invoice Name : LiRo Engineers, Inc.
Invoice Contact : Steve Frank

Order Date : 3/13/2024 12:28:00 PM
Project Name : Walter Gladwin Recreation
Receive DateTime : 3/13/2024 ~~12:00:00 AM~~ 16:30
Purchase Order :

Project Mgr :
Report Type : NYS ASP A
EDD Type : NYSDEC EDD V-3
Hard Copy Date :
Date Signoff :

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	FAX DATE	DUE DATES
P1747-01	MW-01	Water	03/12/2024	08:00					
					VOC-TCLVOA-10		8260-Low		5 Bus. Days
P1747-02	MW-01-DUP	Water	03/12/2024	08:30					
					VOC-TCLVOA-10		8260-Low		5 Bus. Days
P1747-03	MW-01	Water	03/13/2024	10:00					
					VOC-NYCD	NYCDischarge	624.1		5 Bus. Days
P1747-04	MW-02	Water	03/12/2024	12:00					
					VOC-TCLVOA-10		8260-Low		5 Bus. Days
P1747-05	MW-04	Water	03/12/2024	11:00					
					VOC-TCLVOA-10		8260-Low		5 Bus. Days
P1747-06	TRIP-BLANK	Water	03/12/2024	00:00					
					VOC-TCLVOA-10		8260-Low		5 Bus. Days

Relinguished By :
Date / Time : 3-14-24 0903

Received By :
Date / Time : 3/14/24 09:03

Storage Area : **VOA Refridgerator Room**

Ref #4
Ref #5