

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

LAB CHRONICLE

OrderID:	P5370	OrderDate:	12/20/2024 11:30:07 AM
Client:	Summit Environmental Technologies, LLC	Project:	24120686
Contact:	Jennifer Woolf	Location:	N21

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P5370-01	120524-89	WATER	TOC	SM5310B	12/05/24 10:35		12/20/24 16:57	12/20/24
P5370-02	120624-09	WATER	TOC	SM5310B	12/04/24 10:40		12/20/24 18:25	12/20/24



SAMPLE DATA

Report of Analysis

Client:	Summit Environmental Technologies, LLC	Date Collected:	12/05/24 10:35
Project:	24120686	Date Received:	12/20/24
Client Sample ID:	120524-89	SDG No.:	P5370
Lab Sample ID:	P5370-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
TOC	5100	D	400	76.0	400	mg/L		12/20/24 16:57	SM 5310 B-14

Comments: _____

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

Report of Analysis

Client:	Summit Environmental Technologies, LLC	Date Collected:	12/04/24 10:40
Project:	24120686	Date Received:	12/20/24
Client Sample ID:	120624-09	SDG No.:	P5370
Lab Sample ID:	P5370-02	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
TOC	950	D	400	76.0	400	mg/L		12/20/24 18:25	SM 5310 B-14

Comments:

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



QC RESULT SUMMARY



284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Initial and Continuing Calibration Verification

Client: Summit Environmental Technologies, LLC

SDG No.: P5370

Project: 24120686

RunNo.: LB134049

Analyte		Units	Result	True Value	% Recovery	Acceptance Window (%R)	Analysis Date
Sample ID:	ICV1						
TOC		mg/L	10.2	10	102	90-110	09/25/2024
Sample ID:	CCV1						
TOC		mg/L	0.64	1	64	50-150	12/20/2024
Sample ID:	CCV2						
TOC		mg/L	10.6	10	106	90-110	12/20/2024



284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,
Fax : 908 789 8922

Initial and Continuing Calibration Blank Summary

Client: Summit Environmental Technologies, LLC

SDG No.: P5370

Project: 24120686

RunNo.: LB134049

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB1 TOC	mg/L	< 0.5000	0.5000	U	0.19	1	09/25/2024
Sample ID: CCB1 TOC	mg/L	0.26	0.5000	J	0.19	1	12/20/2024
Sample ID: CCB2 TOC	mg/L	0.27	0.5000	J	0.19	1	12/20/2024

Preparation Blank Summary

Client: Summit Environmental Technologies, LLC

SDG No.: P5370

Project: 24120686

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID:	LB134049BLW						
TOC	mg/L	0.28	0.5000	J	0.19	1	12/20/2024

Matrix Spike Summary

Client:	Summit Environmental Technologies, LLC	SDG No.:	P5370
Project:	24120686	Sample ID:	P5370-01
Client ID:	120524-89MS	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
TOC	mg/L	85-115	5350		5100	D	10	400	2500	*	12/20/2024

Matrix Spike Summary

Client:	Summit Environmental Technologies, LLC	SDG No.:	P5370
Project:	24120686	Sample ID:	P5370-01
Client ID:	120524-89MSD	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
TOC	mg/L	85-115	4950		5100	D	10	400	-1500	*	12/20/2024

Duplicate Sample Summary

Client:	Summit Environmental Technologies, LLC	SDG No.:	P5370
Project:	24120686	Sample ID:	P5370-01
Client ID:	120524-89MSD	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
TOC	mg/L	+/-15	5350		4950		400	8		12/20/2024

Laboratory Control Sample Summary

Client:	Summit Environmental Technologies, LLC	SDG No.:	P5370
Project:	24120686	Run No.:	LB134049

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB134049BSW							
TOC	mg/L	10	10.3		103	1	90-110	12/20/2024



RAW DATA

Sample ID	Result	Std. Dev.	RSD	Mode	ALT
CCV1	0.6391	0.1637	25.61	TOC	
CCB1	0.2592	0.0438	16.89	TOC	
LB134049BLW	0.2759	0.0535	19.39	TOC	
LB134049BSW.....	10.3499...	0.2807..	2.71...	TOC	..
P5370-01X400	12.7410	0.9015	7.08	TOC	
P5370-01MSX400	13.3847	0.6024	4.50	TOC	
P5370-01MSDX400.....	12.3867...	0.5670..	4.58...	TOC	..
P5370-02X400	2.3748	0.2004	8.44	TOC	
CCV2	10.5858	0.1875	1.77	TOC	
CCB2.....	0.2740...	0.0571..	20.83...	TOC	..

Method ID		Sample Type	Vial		Timestamp		Message
TOC 0 - 20 ppmC		Sample	10		2024/12/20	14:12	
TOC 0 - 20 ppmC		Sample	12		2024/12/20	14:34	
TOC 0 - 20 ppmC		Sample	13		2024/12/20	14:57	Low Sample Detected
TOC 0 - 20 ppmC	...	Sample	..	14..	2024/12/20	15:27	..
TOC 0 - 20 ppmC		Sample	17		2024/12/20	16:57	
TOC 0 - 20 ppmC		Sample	18		2024/12/20	17:28	
TOC 0 - 20 ppmC	...	Sample	..	18..	2024/12/20	17:59	..
TOC 0 - 20 ppmC		Sample	16		2024/12/20	18:25	
TOC 0 - 20 ppmC		Sample	11		2024/12/20	18:56	
TOC 0 - 20 ppmC	...	Sample	..	12..	2024/12/20	19:18	..

```
<<<Statistics>>>      Mean:   10.3499      Std Dev:   0.2807      RSD: 2.71
```

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	13.7769	6.8884	467686	-2.733	-2.534	246
2	12.8171	6.4085	435103	-2.745	-2.546	245
3	12.7936	6.3968	434306	-2.736	-2.538	248
4	11.5764	5.7882	392987	-2.784	-2.584	252

<<<Statistics>>> Mean: 12.7410 Std Dev: 0.9015 RSD: 7.08

Sample ID: P5370-01MSX400
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 12201328
Timestamp: 2024/12/20 17:28
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	14.2377	7.1188	483329	-3.119	-2.920	231
2	13.3809	6.6904	454243	-3.183	-2.984	227
3	12.9776	6.4888	440551	-3.231	-3.034	231
4	12.9426	6.4713	439365	-3.264	-3.067	235

<<<Statistics>>> Mean: 13.3847 Std Dev: 0.6024 RSD: 4.50

Sample ID: P5370-01MSDX400
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 12201328
Timestamp: 2024/12/20 17:59
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	11.6128	5.8064	394221	-3.313	-3.116	228
2	12.5536	6.2768	426157	-3.271	-3.074	231
3	12.9671	6.4835	440195	-3.263	-3.064	227
4	12.4131	6.2065	421388	-3.257	-3.058	230

<<<Statistics>>> Mean: 12.3867 Std Dev: 0.5670 RSD: 4.58

Sample ID: P5370-02X400
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 12201800
Timestamp: 2024/12/20 18:25
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	2.6562	1.3281	90169	-3.395	-3.196	165
2	2.3438	1.1719	79566	-3.373	-3.173	153
3	2.1828	1.0914	74099	-3.332	-3.132	151
4	2.3164	1.1582	78636	-3.322	-3.123	155

<<<Statistics>>> Mean: 2.3748 Std Dev: 0.2004 RSD: 8.44

Sample ID: CCV2
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 12201800
Timestamp: 2024/12/20 18:56
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	10.6798	5.3399	362549	-3.456	-3.258	230
2	10.8045	5.4023	366782	-3.416	-3.216	230
3	10.4294	5.2147	354048	-3.384	-3.185	230
4	10.4296	5.2148	354054	-3.340	-3.141	230

<<<Statistics>>> Mean: 10.5858 Std Dev: 0.1875 RSD: 1.77
=====

Sample ID: CCB2	Mode: TOC
Method: TOC 0 - 20 ppmC	Filename: 12201800
Cal. Curve: TOC WATER 0-20PPM	Timestamp: 2024/12/20 19:18
Operator ID: NF IZ	Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	0.3386	0.1693	11494	-3.259	-3.062	95
2	0.2860	0.1430	9709	-3.227	-3.028	94
3	0.2712	0.1356	9208	-3.308	-3.110	93
4	0.2002	0.1001	6798	-3.291	-3.092	92

<<<Statistics>>> Mean: 0.2740 Std Dev: 0.0571 RSD: 20.83
=====

Sample ID	Result	Std. Dev.	RSD	Mode	ALT
0.0PPM	3350	1590	47.47	TOC	
0.5PPM	25944	1031	3.97	TOC	
1.0PPM	45348	1939	4.27	TOC	
2.0PPM.....	78757...	1236..	1.57...	TOC	..
5.0PPM	189582	6966	3.67	TOC	
10.0PPM	356566	4394	1.23	TOC	
20.0PPM.....	684846...	13524..	1.97...	TOC	..
ICV1	10.1602	0.1106	1.09	TOC	
ICB1	0.1685	0.0421	25.01	TOC	
IC-20.....	0.1694...	0.0547..	32.30...	TOC	..
IC-R	0.1653	0.0346	20.94	TOC	

Method ID	Sample Type	Vial		Timestamp	Message
TOC 0 - 20 ppmC	TOC Standard	1	2024/09/25	11:13	Low Sample Detected
TOC 0 - 20 ppmC	TOC Standard	2	2024/09/25	12:02	
TOC 0 - 20 ppmC	TOC Standard	3	2024/09/25	12:52	
TOC 0 - 20 ppmC	...TOC Standard	.. 4..	2024/09/25	13:18	..
TOC 0 - 20 ppmC	TOC Standard	5	2024/09/25	13:45	
TOC 0 - 20 ppmC	TOC Standard	6	2024/09/25	14:12	
TOC 0 - 20 ppmC	...TOC Standard	.. 7..	2024/09/25	14:40	..
TOC 0 - 20 ppmC	Sample	14	2024/09/25	15:07	
TOC 0 - 20 ppmC	Sample	12	2024/09/25	15:31	Low Sample Detected
TOC 0 - 20 ppmC	...Sample	.. 13..	2024/09/25	15:54	..Low Sample Detected
TOC 0 - 20 ppmC	Sample	8	2024/09/25	16:18	Low Sample Detected

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			198547	-3.011	-2.812	170
2			190541	-2.994	-2.797	163
3			187362	-2.998	-2.798	165
4			181877	-2.957	-2.758	165

<<<Statistics>>> Mean: 189582 Std Dev: 6966 RSD: 3.67

Sample ID: 10.0PPM
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 09251050
Timestamp: 2024/09/25 14:12
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			353287	-3.003	-2.806	174
2			362185	-2.970	-2.770	171
3			357930	-2.931	-2.731	174
4			352861	-2.910	-2.711	169

<<<Statistics>>> Mean: 356566 Std Dev: 4394 RSD: 1.23

Sample ID: 20.0PPM
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 09251050
Timestamp: 2024/09/25 14:40
Sample Type: TOC Standard

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1			665638	-2.929	-2.730	183
2			686130	-2.882	-2.683	191
3			690849	-2.884	-2.685	185
4			696765	-2.868	-2.670	184

<<<Statistics>>> Mean: 684846 Std Dev: 13524 RSD: 1.97

Sample ID: ICV1
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 09251050
Timestamp: 2024/09/25 15:07
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	10.0524	5.0262	341249	-2.955	-2.756	169
2	10.1120	5.0560	343275	-2.928	-2.729	169
3	10.1652	5.0826	345080	-2.920	-2.725	171
4	10.3110	5.1555	350027	-2.903	-2.706	169

<<<Statistics>>> Mean: 10.1602 Std Dev: 0.1106 RSD: 1.09

Sample ID: ICB1
Method: TOC 0 - 20 ppmC
Cal. Curve: TOC WATER 0-20PPM
Operator ID: NF IZ

Mode: TOC
Filename: 09251050
Timestamp: 2024/09/25 15:31
Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	0.1868	0.0934	6340	-3.005	-2.908	120
2	0.1290	0.0645	4379	-2.978	-2.916	120
3	0.2191	0.1096	7439	-2.995	-2.919	120
4	0.1390	0.0695	4718	-2.969	-2.868	120

Last Message: Low Sample Detected

<<<Statistics>>> Mean: 0.1685 Std Dev: 0.0421 RSD: 25.01
=====

Sample ID: IC-20 Mode: TOC
Method: TOC 0 - 20 ppmC Filename: 09251050
Cal. Curve: TOC WATER 0-20PPM Timestamp: 2024/09/25 15:54
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	0.1108	0.0554	3761	-2.957	-2.925	120
2	0.1349	0.0675	4580	-2.975	-2.943	120
3	0.2197	0.1099	7459	-2.964	-2.878	120
4	0.2121	0.1061	7202	-2.937	-2.906	120

Last Message: Low Sample Detected

<<<Statistics>>> Mean: 0.1694 Std Dev: 0.0547 RSD: 32.30
=====

Sample ID: IC-R Mode: TOC
Method: TOC 0 - 20 ppmC Filename: 09251050
Cal. Curve: TOC WATER 0-20PPM Timestamp: 2024/09/25 16:18
Operator ID: NF IZ Sample Type: Sample

Rep #	ppm C	ug C	Raw Data	Beginning Baseline	Ending Baseline	Integration Time
1	0.1389	0.0694	4715	-2.914	-2.867	120
2	0.1870	0.0935	6348	-2.915	-2.867	120
3	0.2024	0.1012	6871	-2.908	-2.827	120
4	0.1329	0.0665	4512	-2.881	-2.840	120

Last Message: Low Sample Detected

<<<Statistics>>> Mean: 0.1653 Std Dev: 0.0346 RSD: 20.94
=====

Calibration Report Print Date/Time: 2024/09/25 14:41:00

Cal. Curve ID: TOC WATER 0-20PPM
Created: 2024/09/25 14:40
Calibration Factor (m): 6.789e+04
Y Intercept (b): 11061
r-squared: 0.99944

Standard ID	Y	X Expected	Measured	Message	Date & Time
	Raw Data	ug C	ug C		
0.0PPM	3350	0.000	-0.114	~	2024/09/25 11:13
0.5PPM	25944	0.250	0.219	-12.4	2024/09/25 12:02
1.0PPM	45348	0.500	0.505	1.0	2024/09/25 12:52
2.0PPM	78757	1.000	0.997	-0.3	2024/09/25 13:18
5.0PPM	189582	2.500	2.629	5.2	2024/09/25 13:45
10.0PPM	356566	5.000	5.089	1.8	2024/09/25 14:12
20.0PPM	684846	10.000	9.924	-0.8	2024/09/25 14:40

pe

12
9/25/24

Instrument ID: TOC

Daily Analysis Runlog For Sequence/QC Batch ID # LB134049

Review By	Niha	Review On	12/26/2024 8:57:53 AM
Supervise By	Iwona	Supervise On	12/26/2024 2:01:25 PM
SubDirectory	LB134049	Test	TOC
STD. NAME	STD REF.#		
ICAL Standard	WP109852,WP109853,WP109854,WP109855,WP109856,WP109857		
ICV Standard	WP109859		
CCV Standard	WP111161		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP111162		
Chk Standard	WP109953,WP109860,WP109865		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	0.0PPM	0.0PPM	CAL1	09/25/24 11:13		NF IZ	OK
2	0.5PPM	0.5PPM	CAL2	09/25/24 12:02		NF IZ	OK
3	1.0PPM	1.0PPM	CAL3	09/25/24 12:52		NF IZ	OK
4	2.0PPM	2.0PPM	CAL4	09/25/24 13:18		NF IZ	OK
5	5.0PPM	5.0PPM	CAL5	09/25/24 13:45		NF IZ	OK
6	10.0PPM	10.0PPM	CAL6	09/25/24 14:12		NF IZ	OK
7	20.0PPM	20.0PPM	CAL7	09/25/24 14:40		NF IZ	OK
8	ICV1	ICV1	ICV	09/25/24 15:07		NF IZ	OK
9	ICB1	ICB1	ICB	09/25/24 15:31		NF IZ	OK
10	IC-20	IC-20	SAM	09/25/24 15:54		NF IZ	OK
11	IC-R	IC-R	SAM	09/25/24 16:18		NF IZ	OK
12	CCV1	CCV1	CCV	12/20/24 14:12		NF IZ	OK
13	CCB1	CCB1	CCB	12/20/24 14:34		NF IZ	OK
14	LB134049BLW	LB134049BLW	MB	12/20/24 14:57		NF IZ	OK
15	LB134049BSW	LB134049BSW	LCS	12/20/24 15:27		NF IZ	OK
16	P5370-01	120524-89	SAM	12/20/24 16:57		NF IZ	OK
17	P5370-01MS	120524-89MS	MS	12/20/24 17:28	2.0ml WP111159 +38.0ml Sample	NF IZ	OK
18	P5370-01MSD	120524-89MSD	MSD	12/20/24 17:59	2.0ml WP111159 +38.0ml Sample	NF IZ	OK

Instrument ID: TOC

Daily Analysis Runlog For Sequence/QC Batch ID # LB134049

Review By	Niha	Review On	12/26/2024 8:57:53 AM
Supervise By	Iwona	Supervise On	12/26/2024 2:01:25 PM
SubDirectory	LB134049	Test	TOC
STD. NAME	STD REF.#		
ICAL Standard	WP109852,WP109853,WP109854,WP109855,WP109856,WP109857		
ICV Standard	WP109859		
CCV Standard	WP111161		
ICSA Standard	N/A		
CRI Standard	N/A		
LCS Standard	WP111162		
Chk Standard	WP109953,WP109860,WP109865		

19	P5370-02	120624-09	SAM	12/20/24 18:25		NF IZ	OK
20	CCV2	CCV2	CCV	12/20/24 18:56		NF IZ	OK
21	CCB2	CCB2	CCB	12/20/24 19:18		NF IZ	OK

Prep Standard - Chemical Standard Summary

Order ID : P5370

Test : TOC

Prepbatch ID :

Sequence ID/Qc Batch ID: LB134049,

Standard ID :

WP108534,WP109217,WP109218,WP109850,WP109851,WP109852,WP109853,WP109854,WP109855,WP109856,W
P109857,WP109859,WP109860,WP109861,WP109862,WP109863,WP109864,WP109865,WP109953,WP 111159,WP1
11160,WP111161,WP111162,

Chemical ID :

M5501,M6041,W1993,W2606,W2647,W2784,W2800,W2860,W2862,W3016,W3017,W3018,W3020,W3022,W 3111,W3
112,



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3886	Inorganic carbon stock solution, 1000ppm	WP108534	06/24/2024	10/24/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Iwona Zarych 06/26/2024
<u>FROM</u> 3.49700gram of W2647 + 4.41220gram of W2862 + 993.00000ml of W2606 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2050	TOC STOCK STD, 4000PPM	WP109217	08/07/2024	01/18/2025	Iwona Zarych	WETCHEM_SCALE_5 (WC)	WETCHEM_PIPETTE_3 (WC)	Mohan Bera 08/16/2024
<u>FROM</u>	5.00000ml of W2860 + 8.51200gram of W3111 + 990.00000ml of W3112 = Final Quantity: 1000.000 ml							



<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
2051	TOC STOCK STD-SS, 4000PPM	WP109218	08/07/2024	02/07/2025	Iwona Zarych	WETCHEM_SCALE_5 (WC-5)	WETCHEM_PIPETTE_3 (WC)	Mohan Bera
FROM 5.00000ml of W2860 + 8.51200gram of W2784 + 990.00000ml of W3112 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3888	TOC Water Intermediate std-200ppm	WP109850	09/24/2024	10/01/2024	Niha Farheen Shaik	None	None	Mohan Bera 09/24/2024
<u>FROM</u> 95.00000ml of W3112 + 5.00000ml of WP109217 = Final Quantity: 100.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3889	TOC Water Intermediate std SS-200ppm	WP109851	09/24/2024	10/01/2024	Niha Farheen Shaik	None	None	Mohan Bera 09/24/2024

FROM 95.00000ml of W3112 + 5.00000ml of WP109218 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
304	TOC CAL 0.00ppm	WP109852	09/24/2024	10/01/2024	Niha Farheen Shaik	None	None	Mohan Bera 09/24/2024

FROM 100.00000ml of W3112 = Final Quantity: 100.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
305	TOC CAL 0.5ppm	WP109853	09/24/2024	10/01/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Mohan Bera 09/24/2024
FROM 99.75000ml of W3112 + 0.25000ml of WP109850 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
306	TOC CAL 1.0PPM	WP109854	09/24/2024	10/01/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Mohan Bera 09/24/2024
FROM 99.50000ml of W3112 + 0.50000ml of WP109850 = Final Quantity: 100.000 ml								

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
307	TOC CAL 2.0PPM	WP109855	09/24/2024	10/01/2024	Niha Farheen Shaik	None	WETCHEM_FIPETTE_3 (WC)	Mohan Bera 09/24/2024

FROM 99.00000ml of W3112 + 1.00000ml of WP109850 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
308	TOC CAL 5.0PPM	WP109856	09/24/2024	10/01/2024	Niha Farheen Shaik	None	None	Mohan Bera 09/24/2024

FROM 97.50000ml of W3112 + 2.50000ml of WP109850 = Final Quantity: 100.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
310	TOC CAL 20.0PPM	WP109857	09/24/2024	10/01/2024	Niha Farheen Shaik	None	None	Mohan Bera
								09/24/2024

FROM 90.00000ml of W3112 + 10.00000ml of WP109850 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1650	TOC ICV/LCS STD. 10PPM	WP109859	09/24/2024	10/01/2024	Niha Farheen Shaik	None	None	Mohan Bera
								09/24/2024

FROM 190.00000ml of W3112 + 10.00000ml of WP109851 = Final Quantity: 200.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3887	Inorganic carbon solution, 20ppm	WP109860	09/24/2024	10/01/2024	Niha Farheen Shaik	None	WETCHEM_PIPETTE_3	Mohan Bera
(WC)								
<u>FROM</u>	49.00000ml of W3112 + 1.00000ml of WP108534 = Final Quantity: 50.000 ml							

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4003	Solution A	WP109861	09/24/2024	10/01/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Mohan Bera
<u>FROM</u> 1000.00000ml of W3112 + 2.56500gram of W3018 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4004	Solution B	WP109862	09/24/2024	10/01/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WC SC-5)	None	Mohan Bera
<u>FROM</u> 0.24800gram of W3020 + 0.28100gram of M5501 + 0.28300gram of W2800 + 0.59400gram of W1993 + 1000.00000ml of W3112 + 2.05000gram of W3017 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4005	Solution C	WP109863	09/24/2024	10/01/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Mohan Bera 09/24/2024
<u>FROM</u> 0.70500gram of W3016 + 1000.00000ml of W3112 + 2.80600gram of W2647 = Final Quantity: 1000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
4006	Solution D	WP109864	09/24/2024	10/01/2024	Niha Farheen Shaik	WETCHEM_SCALE_5 (WCS-5)	None	Mohan Bera
<u>FROM</u> 1.86200gram of W3022 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml								

[illegible]

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
613	Phosphoric acid reagent	WP109953	09/25/2024	03/25/2025	Niha Farheen Shaik	None	None	Iwona Zarych
								09/27/2024

FROM 150.00000ml of W3112 + 50.00000ml of W2860 = Final Quantity: 200.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3888	TOC Water Intermediate std-200ppm	WP111159	12/19/2024	12/26/2024	Niha Farheen Shaik	None	None	Iwona Zarych
								12/20/2024

FROM 95.00000ml of W3112 + 5.00000ml of WP109217 = Final Quantity: 100.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3889	TOC Water Intermediate std SS-200ppm	WP111160	12/19/2024	12/26/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/20/2024

FROM 95.00000ml of W3112 + 5.00000ml of WP109218 = Final Quantity: 100.000 ml

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3331	TOC CAL-CCV std, 10PPM	WP111161	12/19/2024	12/26/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/20/2024

FROM 190.00000ml of W3112 + 10.00000ml of WP111159 = Final Quantity: 200.000 ml

Wet Chemistry STANDARD PREPARATION LOG

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1650	TOC ICV/LCS STD. 10PPM	WP111162	12/19/2024	12/26/2024	Niha Farheen Shaik	None	None	Iwona Zarych 12/20/2024
<u>FROM</u> 190.00000ml of W3112 + 10.00000ml of WP111160 = Final Quantity: 200.000 ml								

CHEMICAL RECEIPT LOG BOOK

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)	0000281938	07/06/2026	07/24/2023 / mohan	04/14/2023 / mohan	M5501

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)	23D2462010	03/20/2028	08/16/2024 / mohan	08/16/2024 / mohan	M6041

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 #
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.	P243-500 / Potassium Hydrogen Phthalate, 500 gms	201089	06/30/2025	12/23/2020 / apatel	12/16/2020 / apatel	W2784

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J3040-1 / POTASSIUM CHLORIDE, CRYST, ACS, 500G	198947	09/30/2025	03/08/2021 / apatel	03/08/2021 / apatel	W2800

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J0260-3 / Phosphoric Acid, 2.5 L	0000278313	01/31/2026	07/12/2021 / apatel	07/12/2021 / apatel	W2860

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	EM-SX0395-3 / SODIUM CARBONATE ANHYDR 2.5KG	20A225205	07/13/2026	07/19/2023 / Al-Terek	07/13/2021 / apatel	W2862

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
SIGMA ALDRICH	S9390-100G / Sodium phosphate dibasic heptahydrate	SLCP6576	11/30/2025	04/03/2023 / lwona	04/03/2023 / lwona	W3016

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
SIGMA ALDRICH	C7902-500G / Calcium chloride dihydrate - 500G	SLCP4280	08/31/2025	04/03/2023 / lwona	04/03/2023 / lwona	W3017

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J2500-1 / MAGNESIUM SULFATE 7-HYDRATE CRYSTALS 500G	SLCN3621	12/31/2024	04/03/2023 / lwona	04/03/2023 / lwona	W3018

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Thermo Fisher Scientific	012364.36 / Calcium nitrate tetrahydrate, ACS, 99.0-103.0%	MKCS4612	09/30/2025	04/03/2023 / lwona	04/03/2023 / lwona	W3020

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
SIGMA ALDRICH	S4392-250G / Sodium metasilicate nonahydrate	SLCM8472	03/31/2025	04/05/2023 / lwona	04/05/2023 / lwona	W3022

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	24A1956910	01/18/2025	06/26/2024 / lwona	06/26/2024 / lwona	W3111

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112

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



Characteristic	Requirement		Results	UOM
	Minimum	Maximum		
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 Schoellkopf

Quality Control Manager

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

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

James 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

Phosphoric Acid
BAKER ANALYZED® A.C.S. Reagent

(orthophosphoric acid)



Material No.: 0260-03
Batch No.: 0000278313
Manufactured Date: 2021/02/01
Retest Date: 2026/01/31
Revision No: 2

Certificate of Analysis

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay (H ₃ PO ₄) (by acidimetry)	85.0 – 87.0 %	85.8
Calcium (Ca)	<= 0.002 %	< 0.001
Color (APHA)	<= 10	5
Insoluble Matter	<= 0.001 %	< 0.001
ACS – Magnesium (Mg)	<= 0.002 %	< 0.002
Sulfate (SO ₄)	<= 12 ppm	< 4
Volatile Acids (as CH ₃ COOH)	<= 0.001 %	0.001
Reducing Substances	Passes Test	PT
Chloride (Cl)	<= 3 ppm	< 1
Nitrate (NO ₃)	<= 5 ppm	< 2
Trace Impurities – Antimony (Sb)	<= 20.000 ppm	0.007
Trace Impurities – Arsenic (As)	<= 0.500 ppm	< 0.001
Trace Impurities – Iron (Fe)	<= 10.000 ppm	< 1.000
Heavy Metals (as Pb)	<= 8 ppm	< 3
Trace Impurities – Manganese (Mn)	<= 0.500 ppm	0.005
Trace Impurities – Potassium (K)	<= 40.000 ppm	< 0.001
Trace Impurities – Sodium (Na)	<= 200.000 ppm	0.082

For Laboratory, Research or Manufacturing Use
Exceeds A.C.S. Specifications
Meets Reagent Specifications for testing USP/NF monographs

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

W 3016
Rec 04/03/23 12

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Sodium phosphate dibasic heptahydrate - ACS reagent, 98.0-102.0%

Product Number: S9390
Batch Number: SLCP6576
Brand: SIGALD
CAS Number: 7782-85-6
MDL Number: MFCD00149180
Formula: $\text{HNa}_2\text{O}_4\text{P} \cdot 7\text{H}_2\text{O}$
Formula Weight: 268.07 g/mol
Quality Release Date: 02 NOV 2022
Recommended Retest Date: NOV 2025

 $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Assay	98.0 - 102.0 %	99.8 %
Insoluble Matter	≤ 0.005 %	0.003 %
Chloride (Cl) < or = 0.001%	Pass	Pass
Sulfate < or = 0.005%	Pass	Pass
Iron (Fe) < or = 0.001%	Pass	Pass
Heavy Metals by ICP	< = 0.001%	< 0.001%
pH of 5% solution at 25 deg C	8.7 - 9.3	9.2
Note ACS Tests		



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

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W 3017
Rec 4/3/23 12

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Calcium chloride dihydrate - BioReagent, suitable for cell culture, suitable for insect cell culture, suitable for plant cell culture, $\geq 99.0\%$

Product Number: C7902

Batch Number: SLCP4280

 $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$

Brand: SIGMA

CAS Number: 10035-04-8

MDL Number: MFCD00149613

Formula: $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$

Formula Weight: 147.01 g/mol

Quality Release Date: 14 NOV 2022

Recommended Retest Date: AUG 2025

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Solubility (Color)	Colorless	Colorless
Solubility (Turbidity)	Clear	Clear
294 mg/mL, H ₂ O		
Titration with EDTA	99.0 - 105.0 %	103.3 %
Cell Culture Test	Pass	Pass
Insect Cell Test	Pass	Pass
Plant Cell Culture Test	Pass	Pass



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

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W3018
Rec. 4/3/23

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Magnesium sulfate heptahydrate - ReagentPlus®, ≥99.0%

Product Number: M1880
Batch Number: SLCN3621
Brand: SIGALD
CAS Number: 10034-99-8
MDL Number: MFCD00149785
Formula: MgO4S · 7H2O
Formula Weight: 246.47 g/mol
Quality Release Date: 04 MAY 2022
Recommended Retest Date: DEC 2024

MgSO₄ · 7H₂O

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder or Crystals	Crystals
Solubility (Color)	Colorless	Colorless
Solubility (Turbidity)	Clear	Clear
100 mg/mL, H2O		
Titration with EDTA	≥ 99.0 %	100.6 %



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

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W 3020
Rec. 4/3/23

12

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Name:

Certificate of Analysis**Calcium nitrate tetrahydrate - ACS reagent, 99%**

Product Number: 237124
Batch Number: MKCS4612
Brand: SIGALD
CAS Number: 13477-34-4
MDL Number: MFCD00149604
Formula: $\text{CaN}_2\text{O}_6 \cdot 4\text{H}_2\text{O}$
Formula Weight: 236.15 g/mol
Quality Release Date: 27 FEB 2023
Recommended Retest Date: SEP 2025

 $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$

Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Conforms to Requirements	Crystals
Granular Powder or Crystals or Flakes		
Complexometric EDTA	99.0 - 103.0 %	99.6 %
X-Ray Diffraction	Conforms to Structure	Conforms
pH	5.0 - 7.0	5.4
c = 5%, Water, 25 Deg C		
Insoluble Matter	$\leq 0.005 \%$	$< 0.001 \%$
c = 10%, Water		
Chloride Content	$\leq 0.005 \%$	$< 0.005 \%$
Nitrite (NO_2)	$\leq 0.001 \%$	$< 0.001 \%$
Sulfate (SO_4)	$\leq 0.002 \%$	$< 0.002 \%$
Barium	$\leq 0.005 \%$	$< 0.001 \%$
Heavy Metals	$\leq 5.0 \text{ ppm}$	$< 1.0 \text{ ppm}$
by ICP-OES		
Iron (Fe)	$\leq 5.0 \text{ ppm}$	$< 1.0 \text{ ppm}$
Magnesium (Mg)	$\leq 0.05 \%$	$< 0.01 \%$
Potassium (K)	$\leq 0.005 \%$	$< 0.001 \%$
Sodium (Na)	$\leq 0.01 \%$	$< 0.01 \%$
Strontium (Sr)	$\leq 0.05 \%$	$< 0.01 \%$
Meets ACS Requirements	Current ACS Specification	Conforms

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W3020

Sigma-Aldrich

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 Number: 237124
Batch Number: MKCS4612

Test	Specification	Result
Recommended Retest Period 3 Years		



Larry Coers, Director
Quality Control
Milwaukee, WI US

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.



W 3022

Rec. 4/5/23 12

3050 Spruce Street, Saint Louis, MO 63103, USA

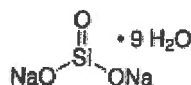
Website: www.sigmaaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Certificate of Analysis

Product Name:

Sodium metasilicate nonahydrate - $\geq 98\%$

Product Number: S4392
Batch Number: SLCM8472
Brand: ALDRICH
CAS Number: 13517-24-3
MDL Number: MFCD00149175
Formula: $\text{Na}_2\text{O}_3\text{Si} \cdot 9\text{H}_2\text{O}$
Formula Weight: 284.20 g/mol
Quality Release Date: 14 MAR 2022
Recommended Retest Date: MAR 2025



Test	Specification	Result
Appearance (Color)	White	White
Appearance (Form)	Powder	Powder
Solubility (Color)	Colorless	Colorless
Solubility (Turbidity)	Clear	Clear
50 mg/ml, H ₂ O		
Titration with HCl	$\geq 98\%$	100 %



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

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.





Certificate of Analysis

Date of Release: 10/24/2019

Name: Sodium carbonate anhydrous

Grade: Meets ACS Specifications. Meets Reagent Specifications for testing USP/NF monographs.

Item No: SX0395-3

Lot No.: 20A225205

Country of Origin: USA

Characteristic	Requirement	Results
Assay (calculated on dried substance)	Min. 99.5 %	100.1 %
Color	White	White
Form	Powder	Powder
Heavy metals (ICP-OES)	Max. 5 ppm	< 5 ppm
Insoluble matter	Max. 0.01 %	< 0.01 %
Loss on heating (285°C)	Max. 1.0 %	< 1.0 %
Sulphur compounds (as SO ₄)	Max. 0.003 %	< 0.003 %
Cl (Chloride)	Max. 0.001 %	< 0.001 %
PO ₄ (Phosphate)	Max. 0.001 %	< 0.001 %
SiO ₂ (Silica)	Max. 0.005 %	< 0.005 %
Ca (Calcium)	Max. 0.03 %	0.005 %
Fe (Iron)	Max. 5 ppm	< 5 ppm
K (Potassium)	Max. 0.005 %	< 0.005 %
Mg (Magnesium)	Max. 0.005 %	< 0.005 %

Joe Schoellkopf

Quality Control Manager

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

EMD Millipore is a division of Merck KGaA, Darmstadt, Germany

EMD Millipore Corporation
400 Summit Drive
Burlington, MA 01803
U.S.A.

Form number: 00005624CA, Rev. 2.0

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	P217	Quality Test / Release Date	09/03/2020
Lot Number	198947		
Description	POTASSIUM CHLORIDE, A.C.S.		
Country of Origin	United States	Suggested Retest Date	Sep/2025
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.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	White crystals
ASSAY	%	Inclusive Between 99.0 - 100.5	99.7
BARIUM (Ba)	PASS/FAIL	= P.T. (ABOUT 0.001%)	P.T. (ABOUT 0.001%)
BROMIDE	%	<= 0.01	<0.01
CALCIUM	%	<= 0.002	<0.002
CHLORATE & NITRATE	%	<= 0.003	<0.001
HEAVY METALS (as Pb)	ppm	<= 5	<5
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
INSOLUBLE MATTER	%	<= 0.005	<0.005
IODIDE	%	<= 0.002	<0.002
IRON (Fe)	ppm	<= 2	<1
MAGNESIUM	%	<= 0.001	<0.0005
PH 5% SOLUTION @ 25 DEG C		Inclusive Between 5.4 - 8.6	6.0
PHOSPHATE (PO4)	ppm	<= 5	<5
SODIUM (Na)	%	<= 0.005	<0.005
SULFATE (SO4)	%	<= 0.001	<0.001



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.

Certificate of Analysis

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	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 - 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.

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



M5497 - M5408
And on 4/14/23
063

Material No.: 3624-01

Batch No.: 0000281938

Manufactured Date: 2021-06-07

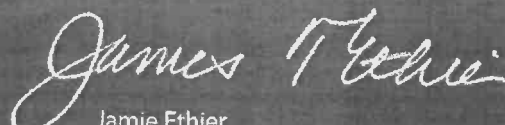
Retest Date: 2026-06-07

Revision No.: 2

Certificate of Analysis

Test	Specification	Result
Assay (NaCl) (by Ag titrn)	≥ 99.0 %	100.0 %
pH of 5% Solution at 25°C	5.0 - 9.0	6.3
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 %	< 0.001 %
ACS - Phosphate (PO ₄)	≤ 5 ppm	< 5 ppm
Sulfate (SO ₄)	≤ 0.004 %	< 0.004 %
Barium (Ba)	Passes Test	Passes Test
ACS - Heavy Metals (as Pb)	≤ 5 ppm	< 5 ppm
Iron (Fe)	≤ 2 ppm	< 1 ppm
Calcium (Ca)	≤ 0.002 %	< 0.001 %
Magnesium (Mg)	≤ 0.001 %	< 0.001 %
Potassium (K)	≤ 0.005 %	0.001 %

For Laboratory, Research, or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs
Country of Origin: USA
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

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

avantor™



Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO ₂)	≤ 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	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 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	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 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	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 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™**

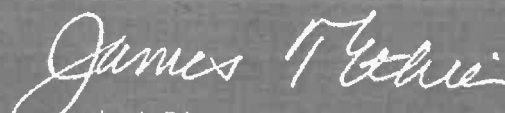


Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	5.4 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	0.4 ppb

For Laboratory, Research, or Manufacturing Use

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


Jamie Ethier
Vice President Global Quality



POTASSIUM HYDROGEN PHTHALATE

Material: N983
Grade: ACS GRADE
Batch Number: 24A1956910

Chemical Formula: HOCC6H4COOK
Molecular Weight: 204.22
CAS #: 877-24-7
Appearance:

Manufacture Date: 01/19/2022
Reassay Date: 01/18/2025

Storage: Room Temperature

White crystals.

TEST	SPECIFICATION	ANALYSIS	DISPOSITION
Assay (dried basis)	99.95 - 100.05 %	99.97 %	PASS
Chlorine Compounds	<= 0.003 %	<0.003 %	PASS
Heavy Metals (as Pb)	<= 5 ppm	<5 ppm	PASS
Insoluble Matter	<= 0.005 %	0.003 %	PASS
Iron	<= 5 ppm	<5 ppm	PASS
pH (0.05M, Water) @25C	4.00 - 4.02	4.00	PASS
Sodium	<= 0.005 %	<0.005 %	PASS
Sulfur Compounds	<= 0.002 %	<0.002 %	PASS

Spec Set: N983ACS

Internal ID #: 710

Signature

We certify that this batch conforms to the specifications listed.

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

Leona Edwardson, Quality Control Sr. Manager - Solon
VWR Chemicals, LLC.
28600 Fountain Parkway, Solon OH 44139 USA

Additional Information

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

Product meets analytical specifications of the grades listed.



SHIPPING DOCUMENTS



CHAIN OF CUSTODY RECORD

Omega COCID 3825

PAGE: 1

OF: 1

05370 ADDRESS

Summit Environmental Technologies, Inc.

3310 Wain St.

Cuyahoga Falls, Ohio 44223

TEL: (330) 253-8211

FAX: (330) 253-4489

Website: <http://www.setek.com>

SUB CONTRACTOR: Chemtech NJ

COMPANY:

Chemtech

ADDRESS:

284 Sheffield St., Ste 1

CITY, STATE, ZIP:

Mountainside, NJ 07092

PHONE:

(908) 789-8900

FAX:

EMAIL:

ACCOUNT #:

SPECIAL INSTRUCTIONS / COMMENTS:

send results to snajjar@setek.com

PO 24120686

ANALYTICAL PARAMETERS

AS3108

COMMENTS

Mechanically Preserved Weights
HOT Sample Notation
Additional Sample Description,
etc.

ITEM #	SAMPLE ID	Client Sample ID	Bottle Type	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS
1	24120686-00	120524 89	40ML-AMB-	Non-Potabl	2/5/2024 10:35:00 AM	1
2	24120686-00	120624 09	40ML-AMB-	Non-Potabl	2/4/2024 10:40:00 AM	1

Relinquished By: *Patricia Williams*

Date: 12/19/2024

Time: 1:55 PM

Received By:

OR

Date: 12-20-24

Time: 11:00

Relinquished By:

Date:

Time:

Received By:

Date:

Time:

Relinquished By:

Date:

Time:

Received By:

Date:

Time:

TAT:

Standard ☐

RUSH ☐

Next BD ☐

2nd BD ☐

3rd BD ☐

Note: RUSH requests will incur surcharges!

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost)

☐ FAX

☐ EMAIL

☐ ONLINE

FOR LAB USE ONLY

Temp of samples

2.1 °C

Attempt to Cool?

Comments:

IR-6m #1



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-0830
DOD ELAP (ANAB)	L2219
Maine	2024021
Maryland	296
New Hampshire	255424 Rev 1
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	525-24-234-08441
Texas	T104704488