

## **DATA PACKAGE**GENERAL CHEMISTRY

**PROJECT NAME: FORMER SCHLUMBERGER SITE PRINCETON NJ** 

**JACOBS ENGINEERING GROUP, INC.** 

412 Mt. Kemble Ave

**Downtown Building** 

Morristown, NJ - 07960

Phone No: 9732670555

**ORDER ID: P3596** 

**ATTENTION: Mary I. Murphy** 





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3 2) Signature Page 3) Case Narrative 4 4) Qualifier Page 5 5) Conformance/Non Conformance 6 7 6) QA Checklist 7) Chronicle 8 8) Sample Data 9 8.1) 918-J-WS-081324 10 11 8.2) 918-J-WS-081324-FD 9) QC Data Summary For Genchem 12 9.1) Initial and Continuing Calibration Verification 13 9.2) Initial and Continuing Calibration Blank Summary 14 9.3) Preparation Blank Summary 15 16 9.4) Matrix Spike Summary 9.5) Duplicate Sample Summary 18 9.6) Laboratory Control Sample Summary 20 10) GENCHEM RAW DATA 21 10.1) GENCHEM RAW DATA - ANALYTICAL 22 22 10.1.1) LB131983 11) Analytical Runlogs 25 12) Standard Prep Logs 27 13) Shipping Document 43 44 13.1) Chain Of Custody 45 13.2) Lab Certificate 13.3) Internal COC 46

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**Cover Page** 

Order ID: P3596

**Project ID:** Former Schlumberger Site Princeton NJ

**Client:** JACOBS Engineering Group, Inc.

**Lab Sample Number** 

**Client Sample Number** 

P3596-01 918-J-WS-081324 P3596-02 918-J-WS-081324-FD P3596-03 TB-01-081324

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:

J. N. Pandya

NYDOH CERTIFICATION NO - 11376

**APPROVED** 

By Nimisha Pandya QA/QC Supervisor at 11:15 am, Sep 05, 2024

NJDEP CERTIFICATION NO - 20012

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

#### CASE NARRATIVE

JACOBS Engineering Group, Inc.

Project Name: Former Schlumberger Site Princeton NJ

Project # N/A

Chemtech Project # P3596

**Test Name: Hexavalent Chromium** 

#### A. Number of Samples and Date of Receipt:

3 Water samples were received on 08/13/2024.

#### **B. Parameters:**

According to the Chain of Custody document, the following analyses were requested: Hexavalent Chromium, Mercury, Metals Group4, SVOCMS Group3, SVOCMS Group6 and VOCMS Group6. This data package contains results for Hexavalent Chromium.

#### C. Analytical Techniques:

The analysis of Hexavalent Chromium was based on method 7196A.

#### D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all samples.

The Duplicate analysis met criteria for all samples.

The Matrix Spike analysis met criteria for all samples.

The Matrix Spike Duplicate analysis met criteria for all samples.

The Blank analysis did not indicate the presence of lab contamination.

The Calibration met the requirements.

#### E. Additional Comments:

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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

N. N. Pandya
Signature

**APPROVED** 

By Nimisha Pandya QA/QC Supervisor at 11:15 am, Sep 05, 2024

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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								
Е	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								

Q Indicates the LCS did not meet the control limits requirements

instrument for that specific analysis.

H Sample Analysis Out Of Hold Time

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## ALLIANCE 284 Sheffield Street, Mountainside New Jersey 07092

NEW JERSEY LAB ID#: 20012: NEW YORK LAB ID#: 11376

#### GENERAL CHEMISTRY CONFORMANCE/NON-CONFORMANCE SUMMARY

CHEMTECH PROJECT NUMBER: P3596 MATRIX: Water METHOD: 7196A NA NO YES 1. Blank Contamination - If yes, list compounds and concentrations in each blank: 2. Matrix Spike Duplicate Recoveries Met Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range. The Blank Spike met requirements for all samples. 3. Sample Duplicate Analysis Met QC Criteria If not met, list those compounds and their recoveries which fall outside the acceptable range. 4. Digestion Holding Time Met If not met, list number of days exceeded for each sample:

ADDITIONAL COMMENTS:

5. M. Jodhemi
QA REVIEW

**REVIEWED** 

By Sohil Jodhani, QA/QC Director at 10:19 am, Sep 05, 2024

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APPENDIX A

#### **QA REVIEW GENERAL DOCUMENTATION**

Project #: P3596

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

1st Level QA Review Signature:

SOHIL JODHANI

**APPROVED** 

2nd Level QA Review Signature:

P3596-GENCHEM

N. N. Pandya

By Nimisha Pandya QA/QC Supervisor at 11:15 am, Sep 05, 2024

Date: 08/19/2024

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#### LAB CHRONICLE

OrderID: P3596 OrderDate: 8/13/2024 1:10:00 PM

Client: JACOBS Engineering Group, Inc. Project: Former Schlumberger Site Princeton NJ

Contact: Mary I. Murphy Location: D21,VOA Ref. #3 Water

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
P3596-01	918-J-WS-081324	WATER			08/13/24 11:15			08/13/24
			Hexavalent Chromium	7196A	11.10		08/13/24 16:29	
P3596-02	918-J-WS-081324-F D	WATER			08/13/24 11:20			08/13/24
			Hexavalent Chromium	7196A			08/13/24 16:33	

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# SAMPLE DATA



P3596-01

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

#### **Report of Analysis**

Client: JACOBS Engineering Group, Inc. Date Collected: 08/13/24 11:15

Project: Former Schlumberger Site Princeton NJ Date Received: 08/13/24

Client Sample ID: 918-J-WS-081324 SDG No.: P3596 WATER

% Solid:

Matrix:

Parameter	Conc. Qua	a. DF MDL	LOQ / CRQL	Units	Prep Date	Date Ana. A	na Met.
Dissolved Heyavalent	0.0030 11	1 0.0030	0.010	mg/I		08/13/24 16:20	7196A

Chromium

Lab Sample ID:

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

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#### **Report of Analysis**

Client: JACOBS Engineering Group, Inc. Date Collected: 08/13/24 11:20

Project: Former Schlumberger Site Princeton NJ Date Received: 08/13/24

Client Sample ID: 918-J-WS-081324-FD SDG No.: P3596

Lab Sample ID: P3596-02 Matrix: WATER

% Solid:

Parameter	Conc. Qua	. DF MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	
Dissolved Heyavalent	0.0030 11	1 0.0030	0.010	mg/I		08/13/24 16:33	7196Δ	

Chromium

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

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# QC RESULT SUMMARY



Fax: 908 789 8922

## **Initial and Continuing Calibration Verification**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

Project: Former Schlumberger Site Princeton NJ RunNo.: LB131983

					%	Acceptance	Analysis
Analyte		Units	Result	True Value	Recoverv	Window (%R)	Date
Sample ID:	ICV						
Hexavalent	Chromium	mg/L	0.503	0.5	101	90-110	08/13/2024
Sample ID:	CCV1						
Hexavalent	Chromium	mg/L	0.499	0.5	100	90-110	08/13/2024
Sample ID:	CCV2						
Hexavalent	Chromium	mg/L	0.499	0.5	100	90-110	08/13/2024

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Fax: 908 789 8922

## **Initial and Continuing Calibration Blank Summary**

Client: JACOBS Engineering Group, Inc. SDG No.:	P3596
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Project: Former Schlumberger Site Princeton NJ RunNo.: LB131983

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: ICB Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	08/13/2024
Sample ID: CCB1 Hexavalent Chromium	mg/L	< 0.0050	0.0050	Ŭ	0.0027	0.01	08/13/2024
Sample ID: CCB2 Hexavalent Chromium	mg/L	< 0.0050	0.0050	U	0.0027	0.01	08/13/2024

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Fax: 908 789 8922

## **Preparation Blank Summary**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

Project: Former Schlumberger Site Princeton NJ

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID: Ib131983E Hexavalent Chromium	BL mg/L	< 0.0050	0.0050	U	0.003	0.01	08/13/2024

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Fax: 908 789 8922

## **Matrix Spike Summary**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

**Project:** Former Schlumberger Site Princeton NJ **Sample ID:** P3596-01

Client ID: 918-J-WS-081324MS Percent Solids for Spike Sample: 0

		Acceptance	Spiked	Conc.	Sample	Conc.	Spike	Dilution	%		Analysis
Analyte	Units	Limit %R	Result	Qualifier	Result	Qualifier	Added	Factor	Rec	Qual	Date
Hexavalent Chromium	mg/L	90-111	1.00		0.0030	U	1.0	2	100		08/13/2024

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Fax: 908 789 8922

## **Matrix Spike Summary**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

**Project:** Former Schlumberger Site Princeton NJ **Sample ID:** P3596-01

Client ID: 918-J-WS-081324MSD Percent Solids for Spike Sample: 0

		Acceptance	Spiked	Conc.	Sample	Conc.	Spike	Dilution	%		Analysis
Analyte	Units	Limit %R	Result	Qualifier	Result	Qualifier	Added	Factor	Rec	Qual	Date
Hexavalent Chromium	mg/L	90-111	1.00		0.0030	U	1.0	2	100		08/13/2024

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Fax: 908 789 8922

## **Duplicate Sample Summary**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

**Project:** Former Schlumberger Site Princeton NJ **Sample ID:** P3596-01

Client ID: 918-J-WS-081324DUP Percent Solids for Spike Sample: 0

		Acceptance	Sample	Conc.	Duplicate	Conc.	Dilution	RPD/		Analysis	
Analyte	Units	Limit	Result	Qualifie	Result	Qualifie	Factor	AD	Qual	Date	
Hexavalent Chromium	mg/L	+/-20	0.0030	U	0.0030	U	1	0		08/13/2024	

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Fax: 908 789 8922

## **Duplicate Sample Summary**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

**Project:** Former Schlumberger Site Princeton NJ **Sample ID:** P3596-01

Client ID: 918-J-WS-081324MSD Percent Solids for Spike Sample: 0

		Acceptance	Sample	Conc.	Duplicate	Conc.	Dilution	RPD/		Analysis	
Analyte	Units	Limit	Result	Qualifie	Result	Qualifie	Factor	AD	Qual	Date	
Hexavalent Chromium	mg/L	+/-20	1.00		1.00		2	0.4		08/13/2024	

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## **Laboratory Control Sample Summary**

Client: JACOBS Engineering Group, Inc. SDG No.: P3596

Project: Former Schlumberger Site Princeton NJ Run No.: LB131983

		True		Conc.	%	Dilution	Acceptance	Analysis
Analyte	Units	Value	Result	Qualifier	Recovery	Factor	Limit %R	Date
Sample ID lb131983BS								
Hexavalent Chromium	mg/L	0.5	0.51		102	1	90-111	08/13/2024

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## **RAW DATA**



#### Analytical Summary Report

Reviewed By: Iwona On: 8/14/2024 10:05:35 AM Inst Id :SPECTROPHOTOME

Analysis Method: 7196A ANALYST: rubina

Parameter: Hexavalent Chromium SUPERVISOR REVIEW BY: Iwona

Run Number: LB131983 pH Meter ID: WC pH Meter-1

Reagent/Standard	Lot/Log #
Calibration Std. hexchrome 0.1 ppm	WP109195
Calibration Std. hexchrome 0.05 ppm	WP109194
calibration std. hexchrome 0.01 ppm	WP109192
calibration std. hexchrome 0 ppm	WP109191
hexavalent chromium color reagent	WP109114
5N sulfuric acid	WP107791
Calibration Std Hexachrome 0.025 ppm	WP109193
Hexavalent Chromium ICV-LCS Std	WP109198
Calibration and CCV std HexChrome 0.5PPM	WP109196
Calibration std HexChrome 1.0PPM	WP109197

Intercept: 0.0001 Slope: 0.7828 Regression: 0.999987

		True Value		Initial Vol	Final Vol	pН	pН	Absorb.at	540nm	Absorbance Result		%D	Anal	Anal
Seq	Lab ID	(mg/1)	DF	(ml)	(ml)	HN03	H2SO4	Backgrnd	Color	Difference	(mg/L)		Date	Time
1	CAL1	0	1	100	100		1.77	0.000	0.000	0.000	-0.00		08/13/2024	16:15
2	CAL2	0.01	1	100	100		1.85	0.000	0.006	0.006	0.007	-30	08/13/2024	16:16
3	CAL3	0.025	1	100	100		1.88	0.000	0.019	0.019	0.024	-4	08/13/2024	16:17
4	CAL4	0.05	1	100	100		1.90	0.000	0.039	0.039	0.049	-2	08/13/2024	16:18
5	CAL5	0.1	1	100	100		1.86	0.000	0.081	0.081	0.103	3	08/13/2024	16:19
6	CAL6	0.5	1	100	100		1.90	0.000	0.393	0.393	0.501	0.2	08/13/2024	16:20
7	CAL7	1	1	100	100		1.88	0.000	0.782	0.782	0.998	-0.2	08/13/2024	16:21



#### Analytical Summary Report



Analysis Method: 7196A ANALYST: rubina

Parameter: Hexavalent Chromium SUPERVISOR REVIEW BY: Iwona

Run Number: LB131983 pH Meter ID:WC pH Meter-1

		True Value		Initial Vol	Final Vol	Hq	Hq	Absorb.a	t540nm	Absorbance	Intermediate	Anal	Anal
Seq	Lab ID		DF	(ml/gm)	(ml)	HN03	H2SO4	Backgrnd	Color	Difference	Result (mg/L)	Date	Time
1	ICV	0.5	1	100	100		1.93	0.000	0.394	0.394	0.503	08/13/2024	16:22
2	ICB		1	100	100		1.74	0.000	0.001	0.001	0.001	08/13/2024	16:23
3	CCV1	0.5	1	100	100		1.95	0.000	0.391	0.391	0.499	08/13/2024	16:24
4	CCB1		1	100	100		1.79	0.000	0.000	0.000	0.000	08/13/2024	16:25
5	RL Check	0.01	1	100	100		1.92	0.000	0.007	0.007	0.009	08/13/2024	16:26
6	lb131983BL		1	100	100		1.78	0.000	0.001	0.001	0.001	08/13/2024	16:27
7	lb131983BS	0.5	1	100	100		1.93	0.000	0.401	0.401	0.512	08/13/2024	16:28
8	P3596-01		1	100	100		2.04	0.000	0.000	0.000	0.000	08/13/2024	16:29
9	P3596-01DU		1	100	100		2.06	0.000	0.000	0.000	0.000	08/13/2024	16:30
10	P3596-01MS	1	2	100	100		2.06	0.000	0.390	0.390	0.498	08/13/2024	16:31
11	P3596-01MS	1	2	100	100		2.10	0.000	0.392	0.392	0.501	08/13/2024	16:32
12	P3596-02		1	100	100		2.02	0.000	0.000	0.000	0.000	08/13/2024	16:33
13	CCV2	0.5	1	100	100		1.96	0.000	0.391	0.391	0.499	08/13/2024	16:34
14	CCB2		1	100	100		1.80	0.000	0.001	0.001	0.001	08/13/2024	16:35

58718197	Date: 08-13-2024 14:22:38	Collect Date Method		08/13/2024 7196A		08/13/2024 7196A
	Dat	Raw Sample Storage Location		D21		ואַר
	nemistry	Customer		JACO05	10004	340003
WORKLIST(Hardcopy Internal Chain)	Department: Wet-Chemistry	Preservative		Ammonium sulfate buffer JACO05	Ammonium sulfate huffer	Saliate Dalle
WORKLIST(Hard	t ID: 182619	Matrix Test		Hexavalent Chromium	Hexavalent Chromium	
	WorkList ID :	Matrix		water	Water	
	HEX-8-13	Customer Sample	918- I-WC 081334	970-001024	918-J-WS-081324-FD	
P3596-0	MorkList Name:	Sample M	P3596-01		P3596-02	

Date/Time 08/13/2024 Raw Sample Relinquished by: Raw Sample Received by:

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Date/Time 08/13/202 u

Raw Sample Relinquished by: Raw Sample Received by:



**Instrument ID:** 

SPECTROPHOTOMETER-1

## Daily Analysis Runlog For Sequence/QCBatch ID # LB131983

Review By	rub	ina	Review On	8/13/2024 4:52:59 PM
Supervise By	lwc	ona	Supervise On	8/14/2024 10:05:35 AM
SubDirectory	LB	131983	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		WP109195,WP109194,	WP109192,WP109191,WP109114,WP	107791,WP109193,WP109198,WP109196,WP109197

	1						T
Sr#	Sampleld	ClientID	QcType	Date	Comment	Operator	Status
1	CAL1	CAL1	CAL	08/13/24 16:15		rubina	ок
2	CAL2	CAL2	CAL	08/13/24 16:16		rubina	ОК
3	CAL3	CAL3	CAL	08/13/24 16:17		rubina	ОК
4	CAL4	CAL4	CAL	08/13/24 16:18		rubina	ОК
5	CAL5	CAL5	CAL	08/13/24 16:19		rubina	ок
6	CAL6	CAL6	CAL	08/13/24 16:20		rubina	ок
7	CAL7	CAL7	CAL	08/13/24 16:21		rubina	ОК
8	ICV	ICV	ICV	08/13/24 16:22		rubina	ок
9	ICB	ICB	ICB	08/13/24 16:23		rubina	ок
10	CCV1	CCV1	CCV	08/13/24 16:24		rubina	ок
11	CCB1	CCB1	ССВ	08/13/24 16:25		rubina	ок
12	RL Check	RL Check	SAM	08/13/24 16:26		rubina	ок
13	lb131983BL	lb131983BL	MB	08/13/24 16:27		rubina	ок
14	lb131983BS	lb131983BS	LCS	08/13/24 16:28		rubina	ок
15	P3596-01	918-J-WS-081324	SAM	08/13/24 16:29		rubina	ок
16	P3596-01DUP	918-J-WS-081324DUI	DUP	08/13/24 16:30		rubina	ок
17	P3596-01MS	918-J-WS-081324MS	MS	08/13/24 16:31	1ML WP108658+99.0ML SAMPLE	rubina	ОК
18	P3596-01MSD	918-J-WS-081324MS	MSD	08/13/24 16:32	1ML WP108658+99.0ML SAMPLE	rubina	ОК

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Fax: 908 789 8922

**Instrument ID:** SPECTROPHOTOMETER-1

#### Daily Analysis Runlog For Sequence/QCBatch ID # LB131983

Review By	rubina	Review On	8/13/2024 4:52:59 PM
Supervise By	lwona	Supervise On	8/14/2024 10:05:35 AM
SubDirectory	LB131983	Test	Hexavalent Chromium
STD. NAME	STD REF.#	ŧ	
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	WP109195,WF	2109194,WP109192,WP109191,WP109	114,WP107791,WP109193,WP109198,WP109196,WP109197

19	P3596-02	918-J-WS-081324-FD	SAM	08/13/24 16:33	rubina	ОК
20	CCV2	CCV2	CCV	08/13/24 16:34	rubina	ОК
21	CCB2	CCB2	ССВ	08/13/24 16:35	rubina	ОК

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## **Prep Standard - Chemical Standard Summary**

Order ID: P3596

Test: Hexavalent Chromium

Prepbatch ID:

Sequence ID/Qc Batch ID: LB131983,

#### Standard ID:

WP107791,WP108658,WP108659,WP109114,WP109190,WP109191,WP109192,WP109193,WP109194,WP109195,WP109196,WP109197,WP109198,

Chemical ID:

E3772,M5211,W2606,W2651,W2652,W2979,W3112,

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Fax: 908 789 8922

## Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Iwona Zarych
126	5N sulfuric acid	WP107791	05/07/2024	10/24/2024	Niha Farheen	None	None	-
					Shaik			05/07/2024
	440.000001 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		Fired Over	tit 4 000 l				

Recipe ID	NAME.	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Iwona Zarych			
1993	HEXAVALENTCHROMIUM STOCK	WP108658	07/09/2024	01/09/2025	Rubina Mughal	WETCHEM_S	None				
	STD 1, 50PPM					CALE_5 (WC		07/09/2024			
	SC-5)										

**FROM** 0.14140gram of W2651 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml

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## Wet Chemistry STANDARD PREPARATION LOG

<u> </u>	Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Iwona Zarych
	1994		WP108659	07/09/2024	01/09/2025	Rubina Mughal	_	None	07/00/0004
F		STD 2, 50PPM					CALE_5 (WC		07/09/2024

**FROM** 0.14140gram of W2652 + 1000.00000ml of W3112 = Final Quantity: 1000.000 ml

Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera
114	hexavalent chromium color	WP109114	08/09/2024	08/16/2024	Rubina Mughal	WETCHEM_S	None	
	reagent					CALE_5 (WC		08/09/2024
	reagent					SC-5)		00/09/2025

FROM 0.25000gram of W2979 + 50.00000ml of E3772 = Final Quantity: 50.000 ml

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## Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera		
1103	HEX CHROME INTERMEDIATE STD SOURCE 1 (5PPM)	WP109190	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P PETTE_3	l 08/16/2024		
FROM	9.00000ml of W3112 + 1.00000ml of WP108658 = Final Quantity: 10.000 ml (WC)									

	Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera
	110	calibration std. hexchrome 0 ppm	<u>WP109191</u>	08/13/2024	08/14/2024	Rubina Mughal	None	None	08/16/2024
ļ									08/16/2024

**FROM** 100.0000ml of W3112 = Final Quantity: 100.000 ml

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## Wet Chemistry STANDARD PREPARATION LOG

Recipe				Expiration	<u>Prepared</u>			Supervised By		
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Mohan Bera		
109	calibration std. hexchrome 0.01	WP109192	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P	ı		
	ppm						PETTE_3	08/16/2024		
FDOM	00 80000ml of W2112 + 0 20000ml of WP100100 = Final Quantity: 100 000 ml									

FROM	99.80000ml of W3112 + 0.20000ml of WP109190 = Final Quantity: 100.000 ml
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Recipe ID	<u>NAME</u>	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera	
3800		WP109193	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P		
	0.025 ppm						PETTE_3	08/16/2024	l
							(WC)		L

**FROM** 99.50000ml of W3112 + 0.50000ml of WP109190 = Final Quantity: 100.000 ml

P3596-GENCHEM 31 of 46

Aliance TECHNICAL GROUP

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## Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera		
108	Calibration Std. hexchrome 0.05 ppm	<u>WP109194</u>	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P PETTE_3	I 08/16/2024		
	(WC)									

Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera			
107	Calibration Std. hexchrome 0.1	WP109195	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P				
	ppm						PETTE_3	08/16/2024			

**FROM** 99.80000ml of W3112 + 0.20000ml of WP108658 = Final Quantity: 100.000 ml

P3596-GENCHEM **32 of 46** 

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## Wet Chemistry STANDARD PREPARATION LOG

Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera
3808	Calibration and CCV std HexChrome 0.5PPM	<u>WP109196</u>	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P PETTE_3	l 08/16/2024
(WC)								

**FROM** 

Recipe ID	NAME_	NO.	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By  Mohan Bera
3809	Calibration std HexChrome	<u>WP109197</u>	08/13/2024	08/14/2024	Rubina Mughal	None	WETCHEM_P	
	1.0PPM						PETTE_3	08/16/2024
	(WC)							

**FROM** 98.00000ml of W3112 + 2.00000ml of WP108658 = Final Quantity: 100.000 ml

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Fax: 908 789 8922



Recipe ID 3804	NAME  Hexavalent Chromium ICV-LCS Std	<u>NO.</u> WP109198	Prep Date 08/13/2024		<u>Prepared</u> <u>By</u> Rubina Mughal	ScaleID None	PipettelD WETCHEM_P PETTE 3	Supervised By  Mohan Bera I  08/16/2024
FROM	99.00000ml of W3112 + 1.00000ml o	f WP108659	9 = Final Qua	ntity: 100.000	ml		(WC)	

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## **CHEMICAL RECEIPT LOG BOOK**

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)	22L2862006	02/01/2025	08/01/2024 / Rajesh	07/19/2024 / Rajesh	E3772
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 / mohan	04/26/2022 / mohan	M5211
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	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.	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 /	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.	31390 / 1,5-Diphenylcarbazide	MKCR6636	12/09/2027	12/09/2022 / Iwona	12/09/2022 / lwona	W2979

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**CHEMICAL RECEIPT LOG BOOK** 

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 / Iwona	07/03/2024 / Iwona	W3112

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## Certificate of Analysis

Product No.: 13450

Product: Potassium dichromate, ACS, 99.0% min

Lot No.: T15F019

Test	Limits	Results
Appearance Identification Purity	Orange-red crystals To Pass 99.0 % min	Orange-red crystals Passes 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 %

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This is to certify that units of the lot number above 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 purchaser, formulator or those performing further manufacturing 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 above information is the actual analytical results obtained.

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Certificate of Analysis Page 1 of 1



## 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	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			

Derisa 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.

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Acetone

BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis





Material No.: 9254-03

Batch No.: 22L2862006

Manufactured Date: 2022-12-19 Expiration Date: 2025-12-18

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ((CH <sub>3</sub> ) <sub>2</sub> CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 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 <sub>2</sub> O)	≤ 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	4

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

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC

Recd 57 RP on 7/19/24

E3772



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





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

Manufactured Date: 2022-02-23 Retest Date: 2027-02-22

Revision No.: 0

## Certificate of Analysis

AppearancePasses TestPasses TestACS - Color (APHA)≤ 105ACS - Residue after Ignition≤ 3 ppm< 1 ppm	Test	Specification	Result
ACS - Color (APHA)	ACS - Assay (H2SO4)	95.0 - 98.0 %	96.5 %
ACS - Residue after Ignition	Appearance	Passes Test	Passes Test
ACS - Substances Reducing Permanganate (as SO2)  ACS - Substances Reducing Permanganate (as SO2)  Ammonium (NH4)  \$1 ppm	ACS – Color (APHA)	≤ 10	5
Ammonium (NH4)	ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
Chloride (Cl)	ACS - Substances Reducing Permanganate (as SO2)	≤ 2 ppm	< 2 ppm
Nitrate (NO₃)	Ammonium (NH <sub>4</sub> )	≤ 1 ppm	< 1 ppm
Phosphate (PO4)       ≤ 0.5 ppm       < 0.1 ppm	Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Trace Impurities - Aluminum (AI)  Arsenic and Antimony (as As)  ∠ 4.0 ppb  ∠ 2.0 ppb  Trace Impurities - Boron (B)  ∠ 10.0 ppb  ∠ 2.0 ppb  ∠ 5.0 ppb  ∠ 5.0 ppb  Trace Impurities - Cadmium (Cd)  ∠ 2.0 ppb  ∠ 2.0 ppb  ∠ 3.0 ppb  ∠ 3.0 ppb  ∠ 5.0 ppb  ∠ 3.0 ppb  ∠ 5.0 ppb  ∠ 6.0 ppb  ∠ 0.4 ppb  ∠ 0.4 ppb  ∠ 0.3 ppb  ∠ 0.3 ppb  ∠ 0.3 ppb  ∠ 0.1 ppb  ∠ 0.1 ppb  ∠ 0.2 ppb  ∠ 0.3 ppb  ∠ 0.2 ppb  ∠ 0.3 ppb  ∠ 0.2 ppb  ∠ 0.3 ppb  ∠ 0.4 ppb  ∠ 0.5 ppb  ∠ 0.6 ppb  ∠ 0.7 ppb  ∠ 0.7 ppb  ∠ 0.8 ppb  ∠ 0.9 ppb	Nitrate (NO <sub>3</sub> )	$\leq 0.2 ppm$	< 0.1 ppm
Arsenic and Antimony (as As)  Frace Impurities – Boron (B)  Frace Impurities – Cadmium (Cd)  Frace Impurities – Cadmium (Cr)  Frace Impurities – Chromium (Cr)  Frace Impurities – Chromium (Cr)  Frace Impurities – Cobalt (Co)  Frace Impurities – Copper (Cu)  Frace Impurities – Copper (Cu)  Frace Impurities – Gold (Au)  Frace Impurities – Gold (Au)  Frace Impurities – Frace Impurities – Iron (Fe)  Frace Impurities – Iron (Fe)  Frace Impurities – Lead (Pb)  Frace Impurities – Magnesium (Mg)  Frace Impurities – Magnesium (Mg)  Frace Impurities – Manganese (Mn)  Frace Impurities – Marcury (Hg)  Frace Impurities – Nickel (Ni)  Frace Impurities – Nickel (Ni)  Frace Impurities – Potassium (K)  Frace Impurities – Potassium (K)  Frace Impurities – Selenium (Se)  Frace Impurities – Selenium (Se)  Frace Impurities – Silicon (Si)	Phosphate (PO <sub>4</sub> )	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities – Boron (B)	Trace Impurities - Aluminum (Al)	≤ 30.0 ppb	1.7 ppb
Trace Impurities – Cadmium (Cd)	Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Chromium (Cr)    \$\leq 6.0 \text{ ppb}\$    \$\leq 0.5 \text{ ppb}\$    \$\leq 0.3 \text{ ppb}\$    Trace Impurities – Cobalt (Co)    \$\leq 0.5 \text{ ppb}\$    \$\leq 0.1 \text{ ppb}\$    Trace Impurities – Copper (Cu)    \$\leq 1.0 \text{ ppb}\$    Trace Impurities – Gold (Au)    \$\leq 10.0 \text{ ppb}\$    \$\leq 500.0 \text{ ppb}\$    Trace Impurities – Iron (Fe)    \$\leq 500.0 \text{ ppb}\$    Trace Impurities – Lead (Pb)    \$\leq 0.5 \text{ ppb}\$    Trace Impurities – Magnesium (Mg)    \$\leq 7.0 \text{ ppb}\$    Trace Impurities – Manganese (Mn)    \$\leq 0.5 \text{ ppb}\$    Trace Impurities – Mercury (Hg)    \$\leq 0.5 \text{ ppb}\$    Trace Impurities – Nickel (Ni)    \$\leq 2.0 \text{ ppb}\$    Trace Impurities – Potassium (K)    \$\leq 50.0 \text{ ppb}\$    Trace Impurities – Selenium (Se)    \$\leq 50.0 \text{ ppb}\$    \$\leq 2.0 \text{ ppb}\$    Trace Impurities – Selenium (Se)    \$\leq 50.0 \text{ ppb}\$    \$\leq 50.0 \text{ ppb}\$    \$\leq 2.0 \text{ ppb}\$    \$\leq 2.0 \text{ ppb}\$    Trace Impurities – Selenium (Se)    \$\leq 50.0 \text{ ppb}\$    \$\leq 50.0 \text{ ppb}\$    \$\leq 2.0 \text{ ppb}\$    \$\leq 2.0 \text{ ppb}\$    Trace Impurities – Selenium (Se)    \$\leq 50.0 \text{ ppb}\$	Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cobalt (Co)	Trace Impurities - Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu) $\leq 1.0 \text{ ppb}$ $< 0.1 \text{ ppb}$ Trace Impurities – Gold (Au) $\leq 10.0 \text{ ppb}$ $< 0.2 \text{ ppb}$ Heavy Metals (as Pb) $\leq 500.0 \text{ ppb}$ $< 100.0 \text{ ppb}$ Trace Impurities – Iron (Fe) $\leq 50.0 \text{ ppb}$ $< 0.5 \text{ ppb}$ Trace Impurities – Lead (Pb) $\leq 0.5 \text{ ppb}$ $< 0.5 \text{ ppb}$ Trace Impurities – Magnesium (Mg) $\leq 7.0 \text{ ppb}$ $< 0.6 \text{ ppb}$ Trace Impurities – Manganese (Mn) $\leq 1.0 \text{ ppb}$ $< 0.4 \text{ ppb}$ Trace Impurities – Mercury (Hg) $\leq 0.5 \text{ ppb}$ $< 0.1 \text{ ppb}$ Trace Impurities – Nickel (Ni) $\leq 2.0 \text{ ppb}$ $< 0.3 \text{ ppb}$ Trace Impurities – Potassium (K) $\leq 500.0 \text{ ppb}$ $< 2.0 \text{ ppb}$ Trace Impurities – Selenium (Se) $\leq 50.0 \text{ ppb}$ $< 0.2 \text{ ppb}$	Trace Impurities - Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities - Gold (Au)    \$\leq\$ 10.0 ppb    \$\leq\$ 20.0 ppb    \$\leq\$ 100.0 ppb    \$\leq\$ 20.0 ppb    Trace Impurities - Iron (Fe)    \$\leq\$ 50.0 ppb    \$\leq\$ 2.0 ppb    Trace Impurities - Lead (Pb)    \$\leq\$ 20.5 ppb    Trace Impurities - Magnesium (Mg)    \$\leq\$ 27.0 ppb    \$\leq\$ 20.4 ppb    Trace Impurities - Manganese (Mn)    \$\leq\$ 20.5 ppb    \$\leq\$ 20.1 ppb    Trace Impurities - Mercury (Hg)    \$\leq\$ 20.5 ppb    \$\leq\$ 20.1 ppb    Trace Impurities - Nickel (Ni)    \$\leq\$ 20.0 ppb    \$\leq\$ 20.0 ppb    Trace Impurities - Potassium (K)    \$\leq\$ 500.0 ppb    Trace Impurities - Selenium (Se)    \$\leq\$ 500.0 ppb    \$\leq\$ 20.0 ppb    \$\leq\$ 20.0 ppb    \$\leq\$ 20.0 ppb    \$\leq\$ 20.0 ppb    Trace Impurities - Silicon (Si)    \$\leq\$ 20.0 ppb     \$\leq\$ 20.0 ppb	Trace Impurities - Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Heavy Metals (as Pb) ≤ 500.0 ppb < 100.0 ppb  Trace Impurities – Iron (Fe) ≤ 50.0 ppb	Trace Impurities - Copper (Cu)	≤ 1.0 ppb	< 0.1 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 - Gold (Au)	≤ 10.0 ppb	< 0.2 ppb
Trace Impurities - Lead (Pb)       ≤ 0.5 ppb       < 0.5 ppb	Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 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 - Iron (Fe)	≤ 50.0 ppb	2.0 ppb
Trace Impurities - Manganese (Mn)       ≤ 1.0 ppb       < 0.4 ppb	Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Mercury (Hg) $\leq 0.5 \text{ ppb}$ $< 0.1 \text{ ppb}$ Trace Impurities – Nickel (Ni) $\leq 2.0 \text{ ppb}$ $< 0.3 \text{ ppb}$ Trace Impurities – Potassium (K) $\leq 500.0 \text{ ppb}$ $< 2.0 \text{ ppb}$ Trace Impurities – Selenium (Se) $\leq 50.0 \text{ ppb}$ 12.1 ppb  Trace Impurities – Silicon (Si) $\leq 100.0 \text{ ppb}$ 4.4 ppb	Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.6 ppb
Trace Impurities – Nickel (Ni) $\leq 2.0 \text{ ppb}$ $< 0.3 \text{ ppb}$ Trace Impurities – Potassium (K) $\leq 500.0 \text{ ppb}$ $< 2.0 \text{ ppb}$ Trace Impurities – Selenium (Se) $\leq 50.0 \text{ ppb}$ 12.1 ppb  Trace Impurities – Silicon (Si) $\leq 100.0 \text{ ppb}$ 4.4 ppb	Trace Impurities – Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities – Potassium (K) $\leq 500.0 \text{ ppb}$ $< 2.0 \text{ ppb}$ Trace Impurities – Selenium (Se) $\leq 50.0 \text{ ppb}$ 12.1 ppb  Trace Impurities – Silicon (Si) $\leq 100.0 \text{ ppb}$ 4.4 ppb	Trace Impurities – Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities – Selenium (Se) $\leq 50.0 \text{ ppb}$ 12.1 ppb  Trace Impurities – Silicon (Si) $\leq 100.0 \text{ ppb}$ 4.4 ppb	Trace Impurities - Nickel (Ni)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities – Silicon (Si) ≤ 100.0 ppb 4.4 ppb	Trace Impurities – Potassium (K)	$\leq$ 500.0 ppb	< 2.0 ppb
	Trace Impurities – Selenium (Se)	$\leq$ 50.0 ppb	12.1 ppb
Trace Impurities − Silver (Ag) ≤ 1.0 ppb < 0.3 ppb	Trace Impurities – Silicon (Si)	$\leq$ 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





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

W 2979

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaaldrich.com

Email USA:

techserv@sial.com

Outside USA: eurtechserv@sial.com

lec: 12/08/22

exp. 12/08/27

Certificate of Analysis

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

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

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.



# SHIPPING DOCUMENTS

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P3596-GENCHEM 43 of 46



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

CHEMTECH PROJECT NO.

QUOTE NO. P3596

COC Number 20/11313

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V= 1	CLIENT PROJECT INFORMATION								10	CLIENT BILLING INFORMATION											
COMPANY: Jacobs					PROJECT NAME: \$50 PTC							BILL 1	го: И	lary 1	Morp	shy		PO#:			
ADDRESS: 412 Mt Kemble Ave Suite #100					PROJECT NO .: D3779972 LOCATION: Prince ben Juckin Address:									/	1	/					
CITY Mouristown STATE: N. JZIP: 07960					PROJECT MANAGER: Mary Murphy								CITY			STA	STATE: ZIP:				
				e-mail: Mary, Murphy@ Tacohs. com								ATTENTION: PHONE:									
ATTENTION: John Ynfault  PHONE: (281) 414-1719 FAX:														THOIL.			ANA	ALYSIS		1 1 1 1 1	
		FAX:	ON	PHONE: (261)936-6586 FAX:  DATA DELIVERABLE INFORMATION													Tieth.				
FAX (RUSH) _ HARDCOPY (D/ EDD: *TO BE APPRO' STANDARD HAI	Leve Leve + Ri	Level 1 (Results Only) Level 4 (QC + Full Raw Data)  Level 2 (Results + QC) NJ Reduced US EPA CLP  Level 3 (Results + QC NYS ASP A NYS ASP B NYS A																			
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SAMPLE ID	SA	PROJECT AMPLE IDENTIFICA	TION	MATRIX		GRAB	DATE	TIME	# OF BOTTLES	A/E	E	B/E	E						A-HCI B-HN03	D-NaOH E-ICE	
	Rin	1			8	19			_	_1_	2	3	4	5	6	7	8	9	C-H2SO4	F-OTHER	
	118-1	WS	-	X	8-13-2		8	2	4	1	<u> </u>										
	918-J-415-081324-FD				_	100	8-13-2		8	2	4	II.	-								
	TB-01-081324					X	8-13-24	1700	1	$\perp$											
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0.		CAMPLE QUOTOS	V MUCT DE DOO	LIMENTE	D DE:	0117	FACULT	ME CARE	1 50.0	LANG	- DOG	250015	NI INIA:	LIBANG	00115	I from the			18		
ELINQUISHED BY	Y SAMPLER:	DATE/TIME: 1245  B-13-24 DATE/TIME:	RECEIVED BY:	UMENTE	7 10	245 245 1-132	Conditi	ons of bottle onts: See J FC0	affac Myl	at recei	table		gvike	dan	alytes	OOOLER T	of L		O Vocs, Ec	c 0-SVOCS,	
ELINDUISHED BY	1	8-13-24	RECEIVED BY:				Page	of_		CLIENT CHEMT		Hand D □ Pick		□ O	ther Id Samp	ling			Shipmen YES	Complete NO	
3596-GEN	CHEM		WHITE - CHEMTE	CH COPY FO	R RETU	URN TO	O CLIENT	YELLO	W - CHEN	ITECH CO	OPY	PINK -	SAMPLE	R COPY					44 of 46	3	



## Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0830
DOD ELAP (L-A-B)	L2219
Maine	2024021
Maryland	296
New Hampshire	255423
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488

QA Control Code: A2070148 P3596-GENCHEM 45 of 46



Fax: 908 789 8922

#### LOGIN REPORT/SAMPLE TRANSFER

Order ID: P3596

JACO05

Order Date: 8/13/2024 1:10:00 PM

Project Mgr: Yazmeen

Client Name: JACOBS Engineering Grou

Project Name: Former Schlumberger Site I

Report Type: Level 4

Client Contact: Mary I. Murphy

Receive DateTime: 8/13/2024 12:00:00 AM

EDD Type: CH2MHILL

Invoice Name: JACOBS Engineering Grou

Purchase Order:

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Hard Copy Date:

Invoice Contact: Mary I. Murphy

Date Signoff: 8/13/2024 3:37:47 PM

LAB ID	CLIENT ID	MATRIX SAM DA	MPLE ATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	F	AX DATE	DUE DATES
P3596-01	918-J-WS-081324	Water 08/1	3/2024	11:15						
					VOCMS Group6		8260-Low	10 Bus. Days		
P3596-02	918-J-WS-081324-FD	Water 08/1:	3/2024	11:20						
					VOCMS Group6		8260-Low	10 Bus. Days		
P3596-03	TB-01-081324	Water 08/1:	3/2024	12:00						
					VOCMS Group6		8260-Low	10 Bus. Days		

Relinguished By:

Date / Time: 8 3 24

Storage Area: VOA Refridgerator Room