

**DATA PACKAGE  
GENERAL CHEMISTRY**

**PROJECT NAME : R36720**

**TETRA TECH, EMI  
240 Continental Drive, Suite 200**

**Newark, DE - 19713  
Phone No: 302-738-7551**

**ORDER ID : P4992  
ATTENTION : Ava Heiss**



**Laboratory Certification ID # 20012**



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## Cover Page

**Order ID :** P4992

**Project ID :** R36720

**Client :** Tetra Tech, EMI

### Lab Sample Number

P4992-01  
P4992-02  
P4992-03  
P4992-04  
P4992-06  
P4992-07  
P4992-08  
P4992-09

### Client Sample Number

C0KA6  
C0KA7  
C0KA8  
C0KA9  
C0KB1  
C0KB2  
C0KB3  
C0KB4

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 :

N. N. Pandya

**APPROVED**

By Nimisha Pandya, QA/QC Supervisor at 10:39 am, Dec 09, 2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012



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

## CASE NARRATIVE

**Tetra Tech, EMI**

**Project Name: R36720**

**Project # N/A**

**Chemtech Project # P4992**

**Test Name: Oil and Grease**

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

8 Water samples were received on 11/23/2024.

### **B. Parameters:**

According to the Chain of Custody document, the following analyses were requested: Oil and Grease. This data package contains results for Oil and Grease.

### **C. Analytical Techniques:**

The analysis of Oil and Grease was based on method 1664A.

### **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:**

As per method 1664A, MS/MSD is required to be performed with the sample analysis. However, Lab did not receive sufficient volume to perform the MS/MSD for P4992 therefore Lab reported MS-MSD from P4991.

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.

Signature N. N. Pandya

**APPROVED**

By Nimisha Pandya, QA/QC Supervisor at 10:39 am, Dec 09, 2024

## DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

<b>J</b>	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).
<b>U</b>	Indicates the analyte was analyzed for, but not detected.
<b>ND</b>	Indicates the analyte was analyzed for, but not detected
<b>E</b>	Indicates the reported value is estimated because of the presence of interference
<b>M</b>	Indicates Duplicate injection precision not met.
<b>N</b>	Indicates the spiked sample recovery is not within control limits.
<b>S</b>	Indicates the reported value was determined by the Method of Standard Addition (MSA).
<b>*</b>	Indicates that the duplicate analysis is not within control limits.
<b>+</b>	Indicates the correlation coefficient for the MSA is less than 0.995.
<b>D</b>	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
<b>M</b>	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
<b>OR</b>	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
<b>Q</b>	Indicates the LCS did not meet the control limits requirements
<b>H</b>	Sample Analysis Out Of Hold Time

**GENERAL CHEMISTRY CONFORMANCE/NON-CONFORMANCE SUMMARY**

CHEMTECH PROJECT NUMBER: P4992

MATRIX: Water

METHOD: 1664A

	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: As per method 1664A, MS/MSD is required to be performed with the sample analysis. However, Lab did not receive sufficient volume to perform the MS/MSD for P4992 therefore Lab reported MS-MSD from P4991.

S. M. Jodhani  
QA REVIEW

**REVIEWED**

By Sohil Jodhani, QA/QC Director at 10:13 am, Dec 09, 2024

## APPENDIX A

### QA REVIEW GENERAL DOCUMENTATION

Project #: P4992

Completed

For thorough review, the report must have the following:

#### GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

#### COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

#### CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

#### ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SOHIL JODHANI

Date: 12/06/2024

## LAB CHRONICLE

<b>OrderID:</b>	P4992	<b>OrderDate:</b>	11/25/2024 10:15:00 AM
<b>Client:</b>	Tetra Tech, EMI	<b>Project:</b>	R36720
<b>Contact:</b>	Ava Heiss	<b>Location:</b>	L61

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
<b>P4992-01</b>	<b>C0KA6</b>	<b>WATER</b>			<b>11/21/24</b> <b>12:00</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-02</b>	<b>C0KA7</b>	<b>WATER</b>			<b>11/21/24</b> <b>13:00</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-03</b>	<b>C0KA8</b>	<b>WATER</b>			<b>11/21/24</b> <b>11:40</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-04</b>	<b>C0KA9</b>	<b>WATER</b>			<b>11/21/24</b> <b>11:15</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-06</b>	<b>C0KB1</b>	<b>WATER</b>			<b>11/21/24</b> <b>12:25</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-07</b>	<b>C0KB2</b>	<b>WATER</b>			<b>11/21/24</b> <b>12:30</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	
<b>P4992-08</b>	<b>C0KB3</b>	<b>WATER</b>			<b>11/21/24</b> <b>12:40</b>			<b>11/23/24</b>
			Oil and Grease	1664A			12/02/24 10:00	



LAB CHRONICLE

P4992-09	C0KB4	WATER			11/21/24 12:35	11/23/24
			Oil and Grease	1664A		12/02/24 10:00



# SAMPLE DATA

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## Report of Analysis

Client:	Tetra Tech, EMI	Date Collected:	11/21/24 12:00
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA6	SDG No.:	P4992
Lab Sample ID:	P4992-01	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 13:00
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA7	SDG No.:	P4992
Lab Sample ID:	P4992-02	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 11:40
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA8	SDG No.:	P4992
Lab Sample ID:	P4992-03	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 11:15
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KA9	SDG No.:	P4992
Lab Sample ID:	P4992-04	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.60	J	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 12:25
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB1	SDG No.:	P4992
Lab Sample ID:	P4992-06	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	1.00	J	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 12:30
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB2	SDG No.:	P4992
Lab Sample ID:	P4992-07	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.90	J	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 12:40
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB3	SDG No.:	P4992
Lab Sample ID:	P4992-08	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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:	Tetra Tech, EMI	Date Collected:	11/21/24 12:35
Project:	R36720	Date Received:	11/23/24
Client Sample ID:	C0KB4	SDG No.:	P4992
Lab Sample ID:	P4992-09	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Oil and Grease	0.40	U	1	0.40	5.00	mg/L		12/02/24 10:00	1664A

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

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### Preparation Blank Summary

**Client:** Tetra Tech, EMI

**SDG No.:** P4992

**Project:** R36720

Analyte	Units	Result	Acceptance Limits	Conc Qual	MDL	RDL	Analysis Date
Sample ID:	<b>LB133675BL</b>						
Oil and Grease	mg/L	< 2.5000	2.5000	U	0.4	5.0	12/02/2024

## Matrix Spike Summary

<b>Client:</b>	Tetra Tech, EMI	<b>SDG No.:</b>	P4992
<b>Project:</b>	R36720	<b>Sample ID:</b>	P4991-04
<b>Client ID:</b>	C0KB8MS	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	20.7		0.80	J	20.0	1	100		12/02/2024

## Matrix Spike Summary

<b>Client:</b>	Tetra Tech, EMI	<b>SDG No.:</b>	P4992
<b>Project:</b>	R36720	<b>Sample ID:</b>	P4991-04
<b>Client ID:</b>	C0KB8MSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit %R	Spiked Result	Conc. Qualifier	Sample Result	Conc. Qualifier	Spike Added	Dilution Factor	% Rec	Qual	Analysis Date
Oil and Grease	mg/L	78-114	20.2		0.80	J	20.0	1	97		12/02/2024

### Duplicate Sample Summary

<b>Client:</b>	Tetra Tech, EMI	<b>SDG No.:</b>	P4992
<b>Project:</b>	R36720	<b>Sample ID:</b>	P4991-04
<b>Client ID:</b>	C0KB8MSD	<b>Percent Solids for Spike Sample:</b>	0

Analyte	Units	Acceptance Limit	Sample Result	Conc. Qualifier	Duplicate Result	Conc. Qualifier	Dilution Factor	RPD/AD	Qual	Analysis Date
Oil and Grease	mg/L	+/-18	20.7		20.2		1	2.44		12/02/2024

### Laboratory Control Sample Summary

**Client:** Tetra Tech, EMI

**SDG No.:** P4992

**Project:** R36720

**Run No.:** LB133675

Analyte	Units	True Value	Result	Conc. Qualifier	% Recovery	Dilution Factor	Acceptance Limit %R	Analysis Date
Sample ID	LB133675BS							
Oil and Grease	mg/L	20.0	16.7		84	1	78-114	12/02/2024





# RAW DATA

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## Extraction and Analytical Summary Report

**Analysis Method:** 1664A  
**Test:** Oil and Grease  
**Run Number:** LB133675  
**Analysis Date:** 12/02/2024  
**BalanceID:** WC SC-6  
**OvenID:** EXT OVEN-3

**ANALYST:** jignesh  
**REVIEWED BY:** Iwona  
**Extraction Date:** 12/02/2024  
**Extraction IN Time:** 08:00  
**Extraction OUT Time:** 09:30  
**Thermometer ID:** EXT OVEN#3

Dish #	Lab ID	Client ID	Matrix	pH	Sample Vol (ml)	Final Volume (ml)	Empty Dish Weight (g)	Final Empty Dish Weight (g)	Silica Gel Weight (g)	Weight After Drying (g)	Final Weight After Drying (g)	Change Weight (g)	Result in ppm
1	LB133675BL	LB133675BL	WATER	1.3	1000	100	3.0523	3.0523	0	3.0524	3.0524	0.0001	0.1
2	LB133675BS	LB133675BS	WATER	1.3	1000	100	3.1475	3.1475	0	3.1642	3.1642	0.0167	16.7
3	P4991-01	C0KB5	WATER	1.3	1000	100	3.0738	3.0738	0	3.0744	3.0744	0.0006	0.6
4	P4991-02	C0KB6	WATER	1.3	1000	100	3.0460	3.0460	0	3.0469	3.0469	0.0009	0.9
5	P4991-03	C0KB7	WATER	1.3	1000	100	3.0781	3.0781	0	3.0790	3.0790	0.0009	0.9
6	P4991-04	C0KB8	WATER	1.3	1000	100	3.0906	3.0906	0	3.0914	3.0914	0.0008	0.8
7	P4991-05	P4991-04MS	WATER	1.3	1000	100	3.0148	3.0148	0	3.0355	3.0355	0.0207	20.7
8	P4991-06	P4991-04MSD	WATER	1.3	1000	100	2.9968	2.9968	0	3.0170	3.0170	0.0202	20.2
9	P4991-07	C0KB9	WATER	1.3	1000	100	3.0304	3.0304	0	3.0311	3.0311	0.0007	0.7
10	P4991-08	C0KC2	WATER	1.3	1000	100	3.1108	3.1108	0	3.1117	3.1117	0.0009	0.9
11	P4991-09	C0KC4	WATER	1.3	1000	100	3.0056	3.0056	0	3.0063	3.0063	0.0007	0.7
12	P4992-01	C0KA6	WATER	1.6	1000	100	3.0585	3.0585	0	3.0588	3.0588	0.0003	0.3
13	P4992-02	C0KA7	WATER	1.6	1000	100	3.0777	3.0777	0	3.0779	3.0779	0.0002	0.2
14	P4992-03	C0KA8	WATER	1.3	1000	100	3.0599	3.0599	0	3.0601	3.0601	0.0002	0.2
15	P4992-04	C0KA9	WATER	1.3	1000	100	3.0537	3.0537	0	3.0543	3.0543	0.0006	0.6
16	P4992-06	C0KB1	WATER	1.3	1000	100	3.0417	3.0417	0	3.0427	3.0427	0.0010	1
17	P4992-07	C0KB2	WATER	1.3	1000	100	3.0251	3.0251	0	3.0260	3.0260	0.0009	0.9
18	P4992-08	C0KB3	WATER	1.3	1000	100	3.0238	3.0238	0	3.0240	3.0240	0.0002	0.2
19	P4992-09	C0KB4	WATER	1.3	1000	100	3.0491	3.0491	0	3.0494	3.0494	0.0003	0.3

QC Batch# LB133675      Test: Oil and Grease      Analysis Date: 12/02/2024

**Chemicals Used:**

Chemical Name	Chemical Lot #
HEXANE	W3153
pH Paper 0-14	M4909
Sodium Sulfate	EP2570
1:1 HCL	WP110826
Silica Gel	NA
Sand	NA

**Standards Used:**

Standard Name	Amount Used	Standard Lot #
LCSW	2.5 ML	WP100827
LCSWD	NA	NA
MS/MSD	2.5 ML	WP100828

**BALANCE CALIBRATION / OVEN Dessicator Data**

Analytical Balance ID # : WC SC-6

Before Analysis

0.0020 gram Balance: 0.0018 (0.0018-0.0022) In OVEN TEMP1 : 70 °C      Dessicator Time In1 : 11:26  
 1.0000 gram Balance: 1.0004 (0.9950-1.0050) In Time1: 10:00  
 Bal Check Time: 08:15      Out OVEN TEMP1: 70 °C      Dessicator Time Out1: 12:00  
    Out Time1: 11:25

After Analysis

0.0020 gram Balance: 0.0019 (0.0018-0.0022) In OVEN TEMP2 : 71 °C      Dessicator Time In2 : 13:21  
 1.0000 gram Balance: 1.0005 (0.9950-1.0050) In Time2: 12:37  
 Bal Check Time: 14:05      Out OVEN TEMP2: 71 °C      Dessicator Time Out2: 14:00  
    Out Time2: 13:20

## WORKLIST(Hardcopy Internal Chain)

133675

WorkList Name : oil &amp; grease p4991

WorkList ID : 185869

Department : Wet-Chemistry

Date : 12-02-2024 07:43:32

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4991-01	C0KB5	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-02	C0KB6	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-03	C0KB7	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-04	C0KB8	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-05	P4991-04MS	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-06	P4991-04MSD	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-07	C0KB9	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-08	C0KC2	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4991-09	C0KC4	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-01	C0KA6	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-02	C0KA7	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-03	C0KA8	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-04	C0KA9	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-06	C0KB1	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-07	C0KB2	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-08	C0KB3	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A
P4992-09	C0KB4	Water	Oil and Grease	Conc H2SO4 to pH < 2	TETR16	L61	11/21/2024	1664A

Date/Time 12/02/24 07:47

Raw Sample Received by: 70 000011

Raw Sample Relinquished by: [Signature]

Date/Time 12/02/24

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

Date/Time 12/02/24

Raw Sample Received by: [Signature]

Raw Sample Relinquished by: [Signature]

Instrument ID: WC SC-3

**Daily Analysis Runlog For Sequence/QC Batch ID # LB133675**

Review By	jignesh	Review On	12/2/2024 2:24:51 PM
Supervise By	Iwona	Supervise On	12/5/2024 1:32:20 PM
SubDirectory	LB133675	Test	Oil and Grease
<b>STD. NAME</b>	<b>STD REF.#</b>		
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	W3153,M4909,EP2570,WP110826,NA,NA,WP100827,NA,WP100828		

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	LB133675BL	LB133675BL	MB	12/02/24 10:00		jignesh	OK
2	LB133675BS	LB133675BS	LCS	12/02/24 10:00		jignesh	OK
3	P4991-01	C0KB5	SAM	12/02/24 10:00		jignesh	OK
4	P4991-02	C0KB6	SAM	12/02/24 10:00		jignesh	OK
5	P4991-03	C0KB7	SAM	12/02/24 10:00		jignesh	OK
6	P4991-04	C0KB8	SAM	12/02/24 10:00		jignesh	OK
7	P4991-05	P4991-04MS	MS	12/02/24 10:00		jignesh	OK
8	P4991-06	P4991-04MSD	MSD	12/02/24 10:00		jignesh	OK
9	P4991-07	C0KB9	SAM	12/02/24 10:00		jignesh	OK
10	P4991-08	C0KC2	SAM	12/02/24 10:00		jignesh	OK
11	P4991-09	C0KC4	SAM	12/02/24 10:00		jignesh	OK
12	P4992-01	C0KA6	SAM	12/02/24 10:00		jignesh	OK
13	P4992-02	C0KA7	SAM	12/02/24 10:00		jignesh	OK
14	P4992-03	C0KA8	SAM	12/02/24 10:00		jignesh	OK
15	P4992-04	C0KA9	SAM	12/02/24 10:00		jignesh	OK
16	P4992-06	C0KB1	SAM	12/02/24 10:00		jignesh	OK
17	P4992-07	C0KB2	SAM	12/02/24 10:00		jignesh	OK
18	P4992-08	C0KB3	SAM	12/02/24 10:00		jignesh	OK

Instrument ID: WC SC-3

**Daily Analysis Runlog For Sequence/QC Batch ID # LB133675**

Review By	jignesh	Review On	12/2/2024 2:24:51 PM
Supervise By	Iwona	Supervise On	12/5/2024 1:32:20 PM
SubDirectory	LB133675	Test	Oil and Grease
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	W3153,M4909,EP2570,WP110826,NA,NA,WP100827,NA,WP100828		

19	P4992-09	C0KB4	SAM	12/02/24 10:00		jignesh	OK
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## Prep Standard - Chemical Standard Summary

**Order ID :** P4992

**Test :** Oil and Grease

**Prepbatch ID :**

**Sequence ID/Qc Batch ID:** LB133675,

**Standard ID :**

EP2570,WP100827,WP100828,WP110826,WP99896,

**Chemical ID :**

E3551,M4909,M6121,W2606,W2783,W2845,W2898,W2979,W3112,W3153,

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## Extractions 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>
3923	Baked Sodium Sulfate	<a href="#">EP2570</a>	12/02/2024	01/03/2025	Rajesh Parikh	Extraction_SC ALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 12/02/2024
<b>FROM</b> 4000.00000gram of E3551 = Final Quantity: 4000.000 gram								

<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>
114	hexavalent chromium color reagent	<a href="#">WP100827</a>	02/02/2023	02/09/2023	Rubina Mughal	WETCHEM_S CALE_5 (WC SC-5)	None	Iwona Zarych 02/02/2023
<b>FROM</b> 0.25000gram of W2979 + 50.00000ml of W2783 = Final Quantity: 50.000 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>
3456	Cyanide Intermediate Working Std, 5PPM	<a href="#">WP100828</a>	02/02/2023	02/03/2023	Iwona Zarych	None	WETCHEM_FIPETTE_3 (WC)	Sohil Jodhani 02/07/2023
<b>FROM</b> 0.25000ml of W2898 + 49.75000ml of WP99896 = 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>
229	1:1 HCL	<a href="#">WP110826</a>	11/22/2024	05/13/2025	Jignesh Parikh	None	None	Iwona Zarych 11/22/2024
<b>FROM</b> 500.00000ml of M6121 + 500.00000ml of W3112 = Final Quantity: 1.000 L								

## 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>
11	Sodium hydroxide absorbing solution 0.25 N	<a href="#">WP99896</a>	11/15/2022	05/15/2023	Jignesh Parikh	WETCHEM_SCALE_4 (WC SC-4)	None	Iwona Zarych
<b>FROM</b> 21.00000L of W2606 + 210.00000gram of W2845 = Final Quantity: 21.000 L								

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	313201	01/03/2025	01/03/2024 / Rajesh	07/20/2023 / Rajesh	E3551

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	140440 / TEST PAPERS,PH,0-2.5,.2SENSI, 100PK	HC908519	08/31/2024	11/28/2022 / jaswal	08/09/2021 / jaswal	M4909

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9530-33 / Hydrochloric Acid, Instra-Analyzed (cs/6x2.5L)	0000275677	05/13/2025	11/13/2024 / Eman	10/13/2024 / Eman	M6121

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 #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	0000263246	06/17/2023	12/23/2020 / ketankumar	12/23/2020 / ketankumar	W2783

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-7 / Sodium Hydroxide Pellets 12 Kg	21C2456604	01/31/2024	03/30/2022 / JIGNESH	06/24/2021 / apatel	W2845

## CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Supelco	90157 / Cyanide Standard, 1000ppm from Supelco	HC03107133	06/30/2023	01/24/2022 / apatel	01/24/2022 / apatel	W2898

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

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	24G1962003	08/22/2025	11/25/2024 / jignesh	11/21/2024 / jignesh	W3153



# Certificate of Analysis

1.19533.0500 Cyanide standard solution traceable to SRM from NIST  $K_2[Zn(CN)_4]$  in  $H_2O$   
1000 mg/l CN Certipur®  
Batch HC03107133

## Batch Values

Concentration	$\beta$ (CN <sup>-</sup> )	1002	mg/l
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Determination method: Argentometric titration.

The content of this solution was determined with silver nitrate standard solution (article number 1.09081) standardized against volumetric standard sodium chloride (article number 1.02406). The expanded measurement uncertainty is  $\pm 0.7\%$  ( $k=2$  coverage factor for 95% coverage probability). The certified value is traceable to primary standard NIST SRM 999c (NIST: National Institute of Standards and Technology, USA) by means of volumetric standard sodium chloride, measured in the accredited calibration laboratory of Merck KGaA, Darmstadt, Germany in accordance to DIN EN ISO/IEC 17025.

Date of release (DD.MM.YYYY) 02.07.2020

Minimum shelf life (DD.MM.YYYY) 30.06.2023

Ayfer Yildirim

Responsible laboratory manager quality control

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

Acetone  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis



Material No.: 9254-03  
Batch No.: 0000263246  
Manufactured Date: 2020/06/17  
Expiration Date: 2023/06/17  
Revision No: 1

## 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	<= 1.0000 ppm	0.1000
Substances Reducing Permanganate	Passes Test	PT
Titration Acid (µeq/g)	<= 0.3	0.1
Titration 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	5

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

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



**PRODUCTOS  
QUÍMICOS  
MONTERREY, S.A. DE C.V.**

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

## CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na <sub>2</sub> SO <sub>4</sub>
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na <sub>2</sub> SO <sub>4</sub> )	Min. 99.0%	99.7 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.1
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO <sub>4</sub> )	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.003 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreign matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.1 %
Retained on US Standard No. 60 sieve	Min. 94%	97.3 %
Through US Standard No. 60 sieve	Max. 5%	2.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %
COMMENTS		
QC: PhC Irma Belmares		

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

Recd. by R3 on 7/24/23 E 3551

RC-02-01, Ed. 3

Hydrochloric Acid, 36.5-38.0%  
BAKER INSTRA-ANALYZED® Reagent  
For Trace Metal Analysis



R → 16/13/24  
Met dig

M 6121

Material No.: 9530-33  
Batch No.: 0000275677  
Manufactured Date: 2020/12/16  
Retest Date: 2025/12/15  
Revision No: 1

## Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.6
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.190
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	1
ACS - Free Chlorine (as Cl <sub>2</sub> )	<= 0.5 ppm	< 0.5
Phosphate (PO <sub>4</sub> )	<= 0.05 ppm	< 0.03
Sulfate (SO <sub>4</sub> )	<= 0.5 ppm	< 0.3
Sulfite (SO <sub>3</sub> )	<= 0.8 ppm	0.3
Ammonium (NH <sub>4</sub> )	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	29.7
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

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



Test	Specification	Result
Trace Impurities – Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 15.0 ppb	< 1
Trace Impurities – Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 1.0 ppb	0.2
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities – Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Titanium (Ti)	<= 1.0 ppb	0.2
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use  
Product Information (not specifications):  
Appearance (clear, fuming liquid)  
Meets ACS Specifications

Country of Origin: US  
Packaging Site: Phillipsburg 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

W 2979

Rec: 12/09/22

exp. 12/09/27

Product Name:

1,5-Diphenylcarbazine - ACS reagent

Product Number:

259225

Batch Number:

MKCR6636

Brand:

SIAL

CAS Number:

140-22-7

MDL Number:

MFCD00003013

Formula:

C<sub>13</sub>H<sub>14</sub>N<sub>4</sub>O

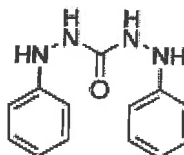
Formula Weight:

242.28 g/mol


Quality Release Date:

02 JUN 2022

## Certificate of Analysis



Test	Specification	Result
Appearance (Color)	Conforms to Requirements	Pink
Off-White to Pink, Light Purple or Tan		
Appearance (Form)	Powder or Chunks	Powder
Melting Point	173.0 - 176.0 °C	173.0 °C
Infrared Spectrum	Conforms to Structure	Conforms
Residue on ignition (Ash)	≤ 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](http://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.



n-Hexane 95%  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis



WJ3153  
SB  
0844e. 11/25/2024  
SB

Material No.: 9262-03  
Batch No.: 24G1962003  
Manufactured Date: 2024-05-23  
Expiration Date: 2025-08-22  
Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	3
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	$\leq 10$	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	$\leq 5$	1
Assay (Total Saturated C <sub>6</sub> Isomers) (by GC, corrected for water)	$\geq 99.5 \%$	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	$\geq 95 \%$	98 %
Color (APHA)	$\leq 10$	5
Residue after Evaporation	$\leq 1.0$ ppm	0.1 ppm
Substances Darkened by H <sub>2</sub> SO <sub>4</sub>	Passes Test	Passes Test
Water (by KF, coulometric)	$\leq 0.05 \%$	< 0.01 %

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

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

Jamie Croak  
Director Quality Operations, Bioscience Production

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

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# SHIPPING DOCUMENTS

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## USEPA CLP COC (LAB COPY)

DateShipped: 11/22/2024

CarrierName: FedEx

AirbillNo: 7701 5007 9029

## CHAIN OF CUSTODY RECORD

DAS #: R36720

Cooler #: Oil and Grease

P4992

**No: 3-112224-083155-0107**

Lab: Chemtech Lab  
Lab Contact: Yazmeen Gomez  
Lab Phone: (908) 728-3147

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ET-DUP-06-20241121	C0KA6	Waste Water/ START	Grab	O/G(14)	3117 (H2SO4) (1)	DUP-06	11/21/2024 12:00	
ET-SW-01-20241121	C0KA7	Surface Water/ START	Grab	O/G(14)	3120 (H2SO4) (1)	SW-01	11/21/2024 13:00	
ET-SW-02-20241121	C0KA8	Surface Water/ START	Grab	O/G(14)	3123 (H2SO4) (1)	SW-02	11/21/2024 11:40	
ET-SW-03-20241121	C0KA9	Surface Water/ START	Grab	O/G(14)	3131 (H2SO4) (1)	SW-03	11/21/2024 11:15	
ET-SW-04-20241121	C0KB0	Surface Water/ START	Grab	O/G(14)	3134 (H2SO4) (1)	SW-04	11/21/2024 09:35	
ET-TW-01-20241121	C0KB1	Treatment Water/ START	Grab	O/G(14)	3137 (H2SO4) (1)	TW-01	11/21/2024 12:25	
ET-TW-02-20241121	C0KB2	Treatment Water/ START	Grab	O/G(14)	3140 (H2SO4) (1)	TW-02	11/21/2024 12:30	
ET-TW-03-20241121	C0KB3	Treatment Water/ START	Grab	O/G(14)	3143 (H2SO4) (1)	TW-03	11/21/2024 12:40	
ET-TW-04-20241121	C0KB4	Treatment Water/ START	Grab	O/G(14)	3146 (H2SO4) (1)	TW-04	11/21/2024 12:35	

Special Instructions: Oil and Grease	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #
Analysis Key: O/G=Oil and Grease	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Sample Shipment	<i>[Signature]</i> / START	11/22/24 1300	<i>[Signature]</i>	11/23/24 10:00	1-3-5 IL Green H1
					<i>[Signature]</i>
					<i>[Signature]</i>

**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