



Prep Standard - Chemical Standard Summary

Order ID : N6070

Test : SVOC-SIMGroup1

Prepbatch ID : PB149692,

Sequence ID/Qc Batch ID: BN121922,

Standard ID :

EP2260,EP2278,EP2279,SP6015,SP6029,SP6030,SP6031,SP6059,SP6064,SP6065,SP6077,SP6078,SP6079,SP6080,
SP6081,SP6082,SP6083,SP6085,

Chemical ID :

10ul/1000ul

sample,E3382,E3397,E3412,E3425,E3430,E3432,E3446,M5037,S10089,S10090,S10210,S10244,S10523,S10541,S105
49,S10597,S10648,S10715,S8793,S9217,S9238,S9273,S9285,S9725,S9901,S9916,S9919,W2606,

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284, Sheffield Street, Mountainside NJ 07092 (908) 789 - 8900

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>
314	1.1 H2SO4 SOLN	EP2260	07/28/2022	01/28/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 07/28/2022

FROM 1000.00000ml of M5037 + 1000.00000ml of W2606 = Final Quantity: 2000.000 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>
1874	10 N SODIUM HYDROXIDE SOLN	EP2278	11/22/2022	02/04/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 11/22/2022

FROM 1000.00000ml of W2606 + 400.00000gram of E3382 = Final Quantity: 1000.000 ml

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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	EP2279	11/28/2022	04/13/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 11/28/2022

FROM 4000.00000gram of E3412 = 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>
3493	Internal Standard 0.4 PPM	SP6015	09/28/2022	03/13/2023	Jagrut Upadhyay	None	None	mohammad ahmed 10/05/2022

FROM 0.02000ml of S10523 + 0.98000ml of E3397 = Final Quantity: 1.000 ml

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<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>
3895	50 ug/ml DFTPP 8270E	SP6029	10/25/2022	02/16/2023	Christian Giraldo	None	None	mohammad ahmed 11/01/2022
<u>FROM</u>	1.00000ml of S10244 + 19.00000ml of E3397 = Final Quantity: 20.000 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>
3355	8270-SIM MDL-3.2PPM CALIBRATION STOCK SOL- 2ND SOURCE	SP6030	10/25/2022	02/26/2023	Jagrut Upadhyay	None	None	mohammad ahmed 11/01/2022
<u>FROM</u>	0.00630ml of S9725 + 0.01280ml of S10597 + 0.03200ml of S8793 + 0.03200ml of S9285 + 0.06400ml of S10089 + 0.06400ml of S10210 + 0.06400ml of S10648 + 19.72490ml of E3397 = Final Quantity: 20.000 ml							

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<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>
3356	8270-SIM MDL-0.4PPM CALIBRATION SOL ICV-2ND SOURCE	SP6031	10/25/2022	02/26/2023	Jagrut Upadhyay	None	None	mohammad ahmed 11/01/2022
FROM 0.87500ml of E3397 + 0.01000ml of SP6015 + 0.12500ml of SP6030 = Final Quantity: 1.010 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>
3492	8270-SIM-Spike 0.4 PPM	SP6059	11/10/2022	02/28/2023	Christian Giraldo	None	None	mohammad ahmed 11/17/2022
<u>FROM</u>	0.00080ml of S9901 + 0.01000ml of S10549 + 0.02000ml of S10090 + 0.02000ml of S10210 + 0.02000ml of S10648 + 49.92920ml of E3425 = Final Quantity: 50.000 ml							

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<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>
3491	8270-SIM-Surrogate 0.4 PPM	SP6064	11/30/2022	03/16/2023	Christian Giraldo	None	None	mohammad ahmed 12/07/2022
<u>FROM</u> 0.00200ml of S9725 + 0.00400ml of S10597 + 0.01000ml of S9273 + 49.98400ml of E3430 = 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>
3493	Internal Standard 0.4 PPM	SP6065	12/05/2022	05/22/2023	Christian Giraldo	None	None	mohammad ahmed 12/07/2022
<u>FROM</u> 0.10000ml of S10541 + 4.90000ml of E3432 = Final Quantity: 5.000 ml								

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SVOC 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>
3339	8270 sim calibration stock 10ppm (CPI)	SP6077	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022

FROM 0.03350ml of S9238 + 0.05000ml of S9217 + 0.12500ml of S9273 + 0.12500ml of S9919 + 0.25000ml of S10715 + 0.25000ml of S9916 + 24.16650ml of E3432 = Final Quantity: 25.000 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>
3361	8270-SIM MDL-5PPM CALIBRATION SOLUTION	SP6078	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022

FROM 0.50000ml of E3432 + 0.01000ml of SP6065 + 0.50000ml of SP6077 = Final Quantity: 1.010 ml

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SVOC 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>
3341	8270-SIM MDL-3.2PPM CALIBRATION SOLUTION	SP6079	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022

FROM 0.68000ml of E3432 + 0.01000ml of SP6065 + 0.32000ml of SP6077 = Final Quantity: 1.010 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>
3344	8270-SIM MDL-1.6PPM CALIBRATION SOLUTION	SP6080	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022

FROM 0.84000ml of E3432 + 0.01000ml of SP6065 + 0.16000ml of SP6077 = Final Quantity: 1.010 ml

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<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>
3342	8270-SIM MDL-0.8PPM CALIBRATION SOLUTION	SP6081	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022
<u>FROM</u> 0.92000ml of E3432 + 0.01000ml of SP6065 + 0.08000ml of SP6077 = Final Quantity: 1.010 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>
3343	8270-SIM MDL-0.4PPM CALIBRATION SOLUTION	SP6082	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022
<u>FROM</u> 0.96000ml of E3432 + 0.01000ml of SP6065 + 0.04000ml of SP6077 = Final Quantity: 1.010 ml								

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SVOC 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>
3345	8270-SIM MDL-0.2PPM CALIBRATION SOLUTION	SP6083	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022

FROM 0.50000ml of E3432 + 0.01000ml of SP6065 + 0.50000ml of SP6082 = Final Quantity: 1.010 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>
3346	8270-SIM MDL-0.1PPM CALIBRATION SOLUTION	SP6085	12/08/2022	02/26/2023	Christian Giraldo	None	None	mohammad ahmed 12/19/2022

FROM 0.75000ml of E3432 + 0.01000ml of SP6065 + 0.25000ml of SP6082 = Final Quantity: 1.010 ml

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4	220601-B017657	08/04/2023	08/04/2022 / Rajesh	08/03/2022 / Rajesh	E3382

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	22G1962004	03/13/2023	09/13/2022 / Rajesh	09/02/2022 / Rajesh	E3397

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	139404	10/23/2023	10/18/2022 / Rajesh	10/13/2022 / Rajesh	E3412

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)	22E1562001	05/03/2023	11/03/2022 / Rajesh	11/03/2022 / Rajesh	E3425

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)	22E1562001	05/29/2023	11/29/2022 / Rajesh	11/16/2022 / Rajesh	E3430

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	22I2962012	05/22/2023	11/22/2022 / Rajesh	11/14/2022 / Rajesh	E3432

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	22J1962006	06/13/2023	12/13/2022 / Rajesh	11/14/2022 / Rajesh	E3446

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

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0178679	04/20/2023	10/20/2022 / Christian	11/23/2021 / Christian	S10089

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at \$85 per ampul if requested - contact ARM with Request]	A0178679	04/20/2023	10/20/2022 / Christian	11/23/2021 / Christian	S10090

[CS 4978-2]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0176420	03/31/2023	10/20/2022 / Christian	03/18/2022 / Christian	S10210

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31615 / SV Mixture, GC/MS Tuning Mixture, CH2Cl2, 1mL,	A0182667	02/16/2023	08/16/2022 / Christian	03/18/2022 / Christian	S10244

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH ₂ Cl ₂ , 1mL	A0180950	12/31/2027	09/23/2022 / Christian	07/05/2022 / Christian	S10523

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH ₂ Cl ₂ , 1mL	A0180950	05/30/2023	11/30/2022 / Christian	07/05/2022 / Christian	S10541

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0179300	04/30/2023	10/31/2022 / Christian	07/05/2022 / Christian	S10549

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH ₂ Cl ₂ ,5ml	A0186198	03/16/2023	09/16/2022 / Christian	08/16/2022 / Christian	S10597

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at \$100 per ampul if requested - contact ARM with Request]	A0188685	04/20/2023	10/20/2022 / Christian	08/23/2022 / Christian	S10648

[CS 4978-1]

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110816-01 / Custom 8270 Mix, 4-79, 1000 mg/L, 1 mL, (Maximum Expiration: 180 Days)	414127	02/26/2023	08/26/2022 / Christian	08/26/2022 / Christian	S10715

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	33913 / SOM01.0 SIM Analysis Standard (Surrogate), 2000 PPM	A0161851	02/26/2023	08/26/2022 / Jagrut	07/14/2020 / Christian	S8793

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-110094-02 / CLP Base/Neutral Surrogate Solution, 5000 mg/L, 1ml	411712	02/26/2023	08/26/2022 / Jagrut	02/25/2021 / Christian	S9217

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	Z-112090-04 / CLP Acid Surrogate Solution, 7500 mg/L, 1ml	440246	02/26/2023	08/26/2022 / Jagrut	02/25/2021 / Christian	S9238

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	33913 / SOM01.0 SIM Analysis Standard (Surrogate), 2000 PPM	A0168492	04/28/2023	10/28/2022 / Christian	03/01/2021 / Christian	S9273

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0156277	04/25/2023	10/25/2022 / Jagrut	06/11/2020 / Christian	S9285

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml, methanol, 5ml/a mpul	A0173743	03/16/2023	09/16/2022 / Christian	08/25/2021 / Christian	S9725

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555872 / Custom Standard, pentachlorophenol Std [CS 5328-5]	A0175414	02/28/2023	08/30/2022 / Christian	08/12/2021 / Christian	S9901

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	z-110381-01 / 8270 Calibration Solution, 76-1, 500 & 1,000 mg/L, 1ml	459699	02/26/2023	08/26/2022 / Jagrut	09/03/2021 / Christian	S9916

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
CPI International	z-010223-01 / 1,4-Dioxane Solution, 2,000mg/L, 1ml	459696	06/08/2023	12/08/2022 / Christian	09/03/2021 / Christian	S9919

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



5580 Skylane Blvd
Santa Rosa, CA 95403

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(800)878-7654 Toll Free
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Manufacturer's Quality System
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by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Rev 0

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Catalog No.: Lot No.: Storage: Solvent: Exp. Date: Description:
Z-110094 411712 $\leq -10^{\circ}\text{C}$ Methylene Chloride 6/24/2023 CLP Base/Neutral Surrogate Solution, 5,000 mg/L, 1 ml
-02

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
1,2-dichlorobenzene-d ₄	2199-69-1	98.5	247.29.2P	4983 $\pm$ 74.16
2-fluorobiphenyl	321-60-8	97.8	8.226.1P	5023 $\pm$ 89.92
nitrobenzene-d ₄	4165-60-0	99.66	7.9.1P	5049 $\pm$ 74.97
p-terphenyl-d ₁₄	1718-51-0	100	9.12.8.1P	5039 $\pm$ 74.99

Received on 02/25/21

by

CG

S9216

+6

S9219

*Not a certified value

Certified By: _____

Shane Overcash
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.



5580 Skyline Blvd
Santa Rosa, CA 95403

(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Manufacturer's Quality System
Audited & Registered
by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Rev 0

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Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:
Z-110816-01	414127	≤ -10 °C	Methylene Chloride	6/21/2025	Custom 8270 Mix, 4-79, 1000 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
atrazine	1912-24-9	99.5	337.7.3P	997 ± 5.81
benzidine	92-87-5	99.9	124.18.6.2P	991.8 ± 5.77
caprolactam	105-60-2	99.9	271.1.6P	999 ± 5.82

Received on
09/20/22
by CG
S10795
to
S10799

*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Certified By: _____

Shane Overcash
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.



5580 Skylane Blvd
Santa Rosa, CA 95403

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Certificate of Analysis

Rev 0

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Catalog No.: Lot No.: **Storage:** **Solvent:** **Exp. Date:** **Description:**
Z-112090 440246 $\leq -10^{\circ}\text{C}$ Methylene Chloride 2/16/2026 CLP Acid Surrogate Solution, 7,500 mg/L, 1 mL
-04

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
2-chlorophenol-d ₄	93951-73-6	99.3	248.12.7P	7487 $\pm$ 17.2
2-fluorophenol	367-12-4	99.8	10.7.3.3P	7513 $\pm$ 17.26
phenol-d ₆	13127-88-3	99.9	949.120.8P	7481 $\pm$ 17.19
2,4,6-tribromophenol	118-79-6	99.8	12.1.6P	7469 $\pm$ 17.17

Received on

02/25/21

by
CG

S9236
to

S9240

*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Erica Castiglione

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.

Certified By: _____

Erica Castiglione
Chemist



5580 Skylane Blvd
Santa Rosa, CA 95403

(707)525-5788
(800)878-7654 Toll Free
(707)545-7901 Fax

Manufacturer's Quality System
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by TUV USA to ISO 9001:2015

Date Received: _____

Certificate of Analysis

Rev 0

Page 1 of 1

Catalog No.:	Lot No.:	Storage:	Solvent:	Exp. Date:	Description:	
Z-010223 -01	459696	≤ -10 °C	Methylene Chloride	7/13/2024	1,4-Dioxane Solution, 2,000 mg/L, 1 mL	
Compound			CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
1,4-dioxane			123-91-1	100	223.1.3P	1993 ± 21.11

Received

on

04/22/22

by

CG

S10318

to

S10322

*Not a certified value

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Certified By: _____

Joanna Radu

Joanna Radu
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values
listed are determined gravimetrically.



5580 Skylane Blvd
Santa Rosa, CA 95403

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09/03/21
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S 9914
to
S 9918

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Audited & Registered
by TUV USA to ISO 9001:2015

Date Received: _____

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Rev 0

Page 1 of 4

Catalog No.: Lot No.: Storage: Solvent: Exp. Date: Description:
Z-110381 459699 $\leq -10^{\circ}\text{C}$ Methylene Chloride 5/10/2026 Method 8270 Calibration Solution, 76-1, 500 & 1,000
-01 mg/L, 1 mL

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
acenaphthene	83-32-9	99.9	13.1.5P	1000 $\pm$ 4.58
acenaphthylene	208-96-8	97.6	14.290.1P	1000 $\pm$ 4.58
aniline	62-53-3	99.9	64.7.1P	997.4 $\pm$ 4.57
anthracene	120-12-7	99.2	15.29.1.1P	1000 $\pm$ 10.95
azobenzene	103-33-3	98.1	252.7.2P	1001 $\pm$ 4.69
benzo[a]anthracene	56-55-3	98.7	16.7.2.5P	1000 $\pm$ 4.58
benzo[b]fluoranthene	205-99-2	98.7	17.1.16P	1000 $\pm$ 4.58
benzo[k]fluoranthene	207-08-9	98.9	18.421.4P	1000 $\pm$ 6.7
benzo[ghi]perylene	191-24-2	97.3	19.286.3P	1001 $\pm$ 20.51
benzo[a]pyrene	50-32-8	98.3	20.286.1P	1000 $\pm$ 20.49
benzyl alcohol	100-51-6	99.9	65.18.1P	982 $\pm$ 4.6
bis(2-chloroethoxy)methane	111-91-1	99.2	31.494.1P	997.5 $\pm$ 14.66
bis(2-chloroethyl)ether	111-44-4	99.8	32.7.1P	1005 $\pm$ 10.87
bis(2-chloro-1-methylethyl) ether	108-60-1	99.5	34.3.14P	1005 $\pm$ 11.93
bis(2-ethylhexyl)adipate	103-23-1	99.5	874.7.1P	995 $\pm$ 4.66
bis(2-ethylhexyl)phthalate	117-81-7	99.4	33.29.1P	993.5 $\pm$ 14.6
4-bromophenyl phenyl ether	101-55-3	99.4	35.7.1.1P	998.7 $\pm$ 10.8
butyl benzyl phthalate	85-68-7	98	36.1.5P	999.7 $\pm$ 14.69
carbazole	86-74-8	99	239.7.1P	987 $\pm$ 4.52

*Not a certified value

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Certified By: _____

Megan Warren
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.

Certificate of Analysis

Page 2 of 4

Catalog No.: Z-110381-01

Lot No.: 459699

Expiration Date: 5/10/2026

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
4-chloroaniline	106-47-8	99.9	66.9.1.1P	995.8 ± 10.91
4-chlorophenylphenyl ether	7005-72-3	98	37.158.2P	985 ± 14.47
4-chloro-3-methylphenol	59-50-7	99.9	102.7.1.1P	999.7 ± 10.81
2-chloronaphthalene	91-58-7	99.8	42.7.5.2P	988.8 ± 4.53
2-chlorophenol	95-57-8	99.9	103.1.3.1P	999.7 ± 14.69
chrysene	218-01-9	98	21.286.1.3P	1000 ± 20.49
dibenz[a,h]anthracene	53-70-3	98	22.286.2.1P	1000 ± 20.49
dibenzofuran	132-64-9	100	67.7.2.1P	991 ± 4.54
di-n-butyl phthalate	84-74-2	99.8	40.9.2P	999.9 ± 14.69
1,2-dichlorobenzene	95-50-1	99.5	43.1.2P	989.4 ± 4.53
1,3-dichlorobenzene	541-73-1	99.8	44.1.2P	991.7 ± 4.54
1,4-dichlorobenzene	106-46-7	99.9	45.29.1P	990.4 ± 4.53
2,4-dichlorophenol	120-83-2	99.2	104.9.1.1P	1011 ± 14.85
diethyl phthalate	84-66-2	99.8	38.7.1P	998.4 ± 10.79
2,4-dimethylphenol	105-67-9	99.6	105.7.1.1P	999.3 ± 10.8
dimethyl phthalate	131-11-3	99.9	39.9.2P	998.7 ± 10.8
1,2-dinitrobenzene	528-29-0	100	86.7.3P	993 ± 4.65
1,3-dinitrobenzene	99-65-0	100	313.7.2P	998 ± 4.68
1,4-dinitrobenzene	100-25-4	100	907.7.1P	999 ± 4.68
2,4-dinitrophenol	51-28-5	99.9	106.1.6DP	1000 ± 10.81
2,4-dinitrotoluene	121-14-2	100	87.7.3P	999.9 ± 10.81
2,6-dinitrotoluene	606-20-2	99.4	88.7.2.1P	998.8 ± 10.8
di-n-octyl phthalate	117-84-0	99.1	41.7.4P	996.5 ± 10.77
diphenylamine	122-39-4	99.9	78.29.1P	993.6 ± 14.6
2,3,5,6-tetrachlorophenol	935-95-5	99	1112.5.10P	989 ± 4.63
fluoranthene	206-44-0	98.6	23.7.4P	1001 ± 4.58
fluorene	86-73-7	99.8	24.1.4P	1008 ± 11.04

*Not a certified value

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Certified By:



Megan Warren
Chemist

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Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.

Certificate of Analysis

Page 3 of 4

Catalog No.: Z-110381-01

Lot No.: 459699

Expiration Date: 5/10/2026

Compound	CAS No.	Purity (%)	Compound Lot No.	Concentration, mg/L
hexachlorobenzene	118-74-1	99	46.158.4P	997.5 ± 10.92
hexachlorobutadiene	87-68-3	97	47.158.2P	988.8 ± 10.83
hexachlorocyclopentadiene	77-47-4	96.5	48.2.1P	1014 ± 11.1
hexachloroethane	67-72-1	99.9	49.1.3P	989.5 ± 4.53
indeno[1,2,3-cd]pyrene	193-39-5	98	25.286.3P	1001 ± 10.96
isophorone	78-59-1	98.8	90.1.2P	995.7 ± 14.63
2-methyl-4,6-dinitrophenol	534-52-1	100	107.1.4.3DP	1003 ± 10.84
1-methylnaphthalene	90-12-0	98.4	249.7.4P	1001 ± 4.58
2-methylnaphthalene	91-57-6	99.1	68.8.1.1P	1002 ± 10.97
2-methylphenol	95-48-7	99.6	114.7.3P	1004 ± 10.86
3-methylphenol	108-39-4	99.2	115.7.3P	500.5 ± 5.41
4-methylphenol	106-44-5	99	116.1.3P	505.6 ± 7.43
naphthalene	91-20-3	99.8	26.9.2P	1000 ± 4.58
2-nitroaniline	88-74-4	99.7	69.29.1P	996.4 ± 4.57
3-nitroaniline	99-09-2	100	70.7.2P	995.6 ± 4.56
4-nitroaniline	100-01-6	99.8	71.1.1P	1000 ± 10.95
nitrobenzene	98-95-3	100	94.7.1P	999.5 ± 10.81
2-nitrophenol	88-75-5	99.1	108.29.1P	1000 ± 10.81
4-nitrophenol	100-02-7	99.9	109.8.1P	1000 ± 14.69
N-nitrosodimethylamine	62-75-9	99.5	57.3.18P	985.4 ± 11.7
N-nitrosodi-n-propylamine	621-64-7	100	59.7.4P	984.4 ± 10.64
pentachlorophenol	87-86-5	99	110.1.7P	1000 ± 10.81
phenanthrene	85-01-8	98.9	27.1.3P	1009 ± 11.05
phenol	108-95-2	100	112.7.1P	1011 ± 10.88
pyrene	129-00-0	98.5	28.9.1.1P	1000 ± 4.58
pyridine	110-86-1	100	101.24.1P	996.8 ± 4.46
2,3,4,6-Tetrachlorophenol	58-90-2	95	120.286.2.1P	984.2 ± 20.19

*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Certified By: 
Megan Warren
Chemist

All weights are traceable through N. I. S. T. Test No. 822/264157-00.
Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.

Certificate of Analysis

Page 4 of 4

Catalog No.: Z-110381-01

Lot No.: 459699

Expiration Date: 5/10/2026

<u>Compound</u>	<u>CAS No.</u>	<u>Purity (%)</u>	<u>Compound Lot No.</u>	<u>Concentration, mg/L</u>
1,2,4-trichlorobenzene	120-82-1	99.6	54.29.1P	987.3 ± 4.52
2,4,5-trichlorophenol	95-95-4	96.5	121.7.1P	996.6 ± 10.78
2,4,6-trichlorophenol	88-06-2	99.6	113.7.1P	1001 ± 10.82

*Not a certified value

Manufactured by o2si smart solutions, Accredited to ISO 9001:2008 by NSF and ISO/IEC 17025:2005 (Certification No. 3031.01) and ISO Guide 34:2009 (Certification No. 3031.02) by A2LA

Certified By:



Megan Warren
Chemist

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Concentration (correct for purity) and uncertainty (95% confidence) values listed are determined gravimetrically.



110 Benner Circle
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Certificate of Analysis



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 Lot No.: A0156277
Description : 1,4-dioxane
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : January 31, 2025 Storage: 0°C or colder

Received on
06/11/20
by CG
S8666
to
S8695

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane	2,003.0 µg/mL	+/- 11.7547 µg/mL Gravimetric
	CAS # 123-91-1 (Lot SHBK6493)		+/- 42.9142 µg/mL Unstressed
	Purity 99%		+/- 44.1601 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S9274
to
S9290

Column:

105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:

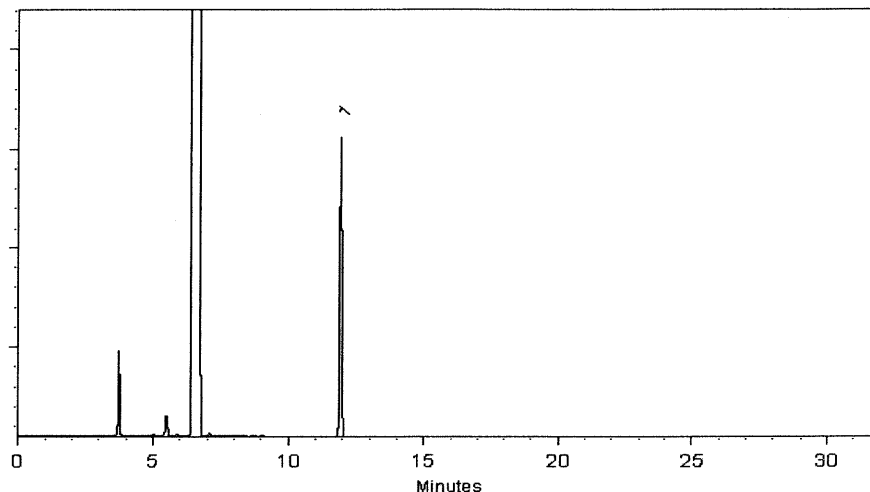
200°C

Det. Temp:

250°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Russ Bookhamer

Russ Bookhamer - Operations Technician I

Date Mixed: 02-Jan-2020

Balance: 1128360905

Jennifer J Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 06-Jan-2020

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

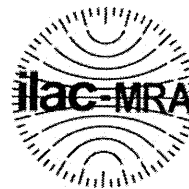


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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 33913 Lot No.: A0161851
Description : SOM01.0 SIM Analysis Standard
SOM01.0 SIM Analysis Standard 2000µg/mL, Methylene chloride, 1 mL /ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : May 31, 2026 Storage: 10°C or colder
Handling: Sonication required. Mix is photosensitive.

Received on
07/14/20
by
CG
58793
to
58794

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Methylnaphthalene-d10 CAS # 7297-45-2 (Lot EF-135) Purity 96%	2,000.6 µg/mL	+/- 18.6049 µg/mL Gravimetric +/- 91.2724 µg/mL Unstressed +/- 101.0370 µg/mL Stressed
2	Fluoranthene-d10 CAS # 93951-69-0 (Lot PR-20668) Purity 98%	2,001.9 µg/mL	+/- 18.6170 µg/mL Gravimetric +/- 91.3319 µg/mL Unstressed +/- 101.1029 µg/mL Stressed
Solvent:	Methylene chloride CAS # 75-09-2 Purity 99%		

Column:

30m x 0.25mm x 0.25µm
Rtx-S (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

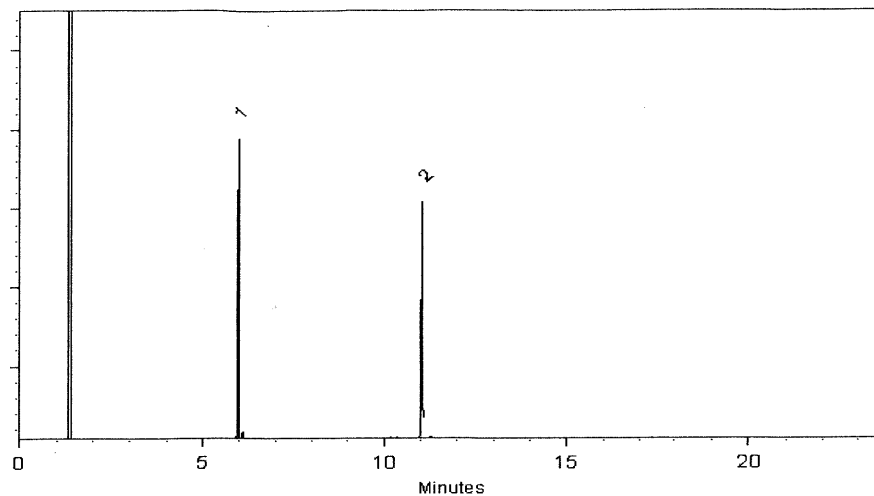
250°C

Det. Temp:

330°C

Det. Type:

FID

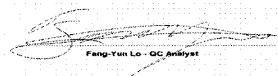


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Katelyn McGinni - Operations Tech I

Date Mixed: 17-Jun-2020

Balance: 1128360905


Fang-Yun Lo - QC Analyst

Date Passed: 19-Jun-2020

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 33913 Lot No.: A0168492

Description : SOM01.0 SIM Analysis Standard

SOM01.0 SIM Analysis Standard 2000µg/mL, Methylene chloride, 1mL /ampul

Container Size : 2 mL Pkg Amt: > 1 mL

Expiration Date : December 31, 2026 Storage: 10°C or colder

Handling: Sonication required. Mix is photosensitive. Ship: Ambient

Received on
03/01/21
by
CG
S 9271
+6
S 9273

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Methylnaphthalene-d10 CAS # 7297-45-2 (Lot EF-135) Purity 96%	2,001.6 µg/mL	+/- 11.7465 µg/mL Gravimetric +/- 90.1674 µg/mL Unstressed +/- 100.0489 µg/mL Stressed
2	Fluoranthene-d10 CAS # 93951-69-0 (Lot PR-20668) Purity 99%	2,008.0 µg/mL	+/- 11.7841 µg/mL Gravimetric +/- 90.4557 µg/mL Unstressed +/- 100.3688 µg/mL Stressed
Solvent:	Methylene chloride CAS # 75-09-2 Purity 99%		

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

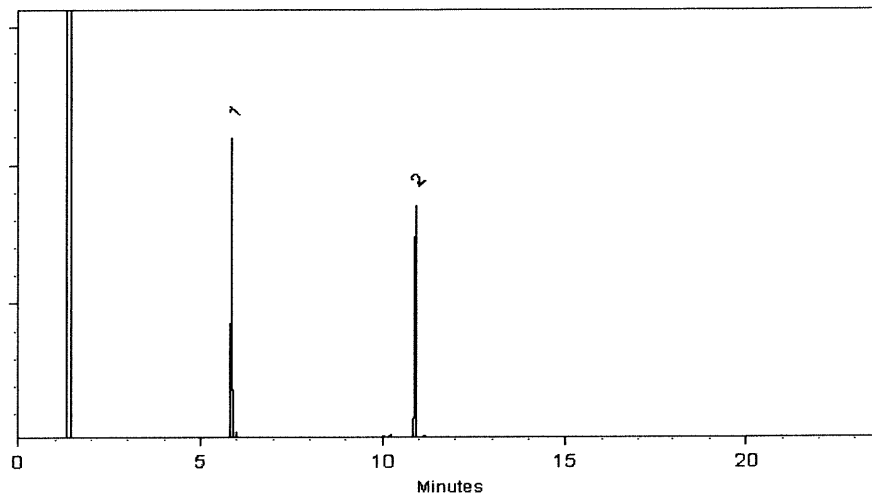
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler
Sam Moodler - Operations Tech I

Date Mixed: 26-Jan-2021

Balance: B345965662

Alexis Shelow
Alexis Shelow - Operations Tech I

Date Passed: 27-Jan-2021

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31087 **Lot No.:** A0173743

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : June 30, 2029 **Storage:** 10°C or colder

Ship: Ambient

Received on
08/25/21
by
CG
S9709
to
S9738

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Fluorophenol CAS # 367-12-4 (Lot STBJ2508) Purity 99%	10,013.5 µg/mL	+/- 58.2194 µg/mL Gravimetric +/- 292.2275 µg/mL Unstressed +/- 354.6068 µg/mL Stressed
2	Phenol-d6 CAS # 13127-88-3 (Lot PR-31262) Purity 99%	10,050.1 µg/mL	+/- 58.4323 µg/mL Gravimetric +/- 293.2963 µg/mL Unstressed +/- 355.9038 µg/mL Stressed
3	2,4,6-Tribromophenol CAS # 118-79-6 (Lot MKCJ7664) Purity 99%	10,044.9 µg/mL	+/- 58.4018 µg/mL Gravimetric +/- 293.1431 µg/mL Unstressed +/- 355.7179 µg/mL Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

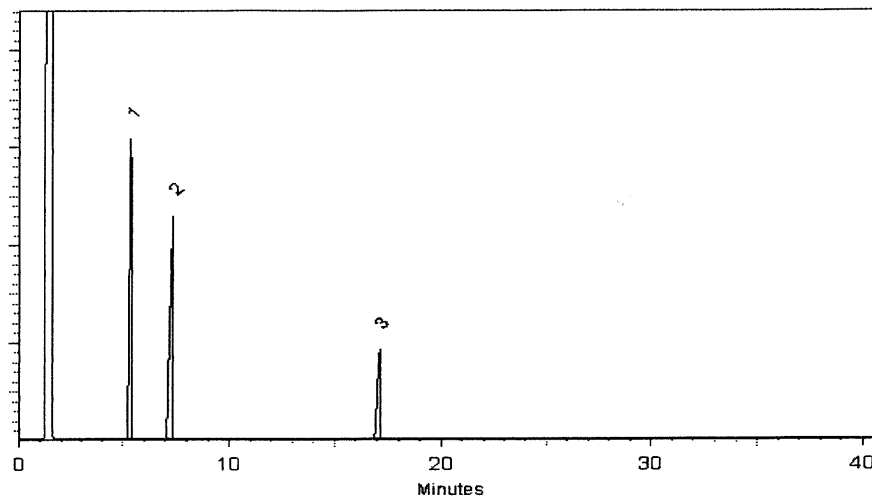
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Aurelia B. Confer

Aurelia Confer - Operations Tech I

Date Mixed: 23-Jun-2021

Balance: B442140311

Marlene Cowan

Marlene Cowan - Operations Tech I

Date Passed: 25-Jun-2021

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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Tel: (800)356-1688
Fax: (814)353-1309

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Gravimetric Certificate



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Received
on
08/12/21
by
CG
S 9899
to
S 9903

Catalog No. : 555872 **Lot No.:** A0175414

Description : Custom Pentachlorophenol Standard

Custom Pentachlorophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2024 **Storage:** 10°C or colder

Ship: Ambient

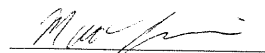
CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Pentachlorophenol	25,072.0 µg/mL	+/- 232.0210 µg/mL Gravimetric
	CAS # 87-86-5 (Lot 210706RSR)		+/- 753.6229 µg/mL Unstressed
	Purity 99%		+/- 906.0356 µg/mL Stressed

Solvent: Methanol

CAS # 67-56-1

Purity 99%


Matt Fragassi - Mix Technician

Date Mixed: 16-Aug-2021 Balance: 1128342314

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Received on
03/18/22
by
CG
S10182
to
S10211

Catalog No. : 31850 Lot No.: A0176420
Description : 8270 MegaMix®
8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : March 31, 2023 Storage: 0°C or colder
Handling: Sonication required. Mix is photosensitive. Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)			
1	Pyridine		1,003.7 µg/mL	+/-	5.8354	µg/mL	Gravimetric
	CAS # 110-86-1	(Lot SHBL0433)		+/-	30.3591	µg/mL	Unstressed
	Purity 99%			+/-	30.3591	µg/mL	Stressed
2	N-Nitrosodimethylamine		1,000.8 µg/mL	+/-	5.8186	µg/mL	Gravimetric
	CAS # 62-75-9	(Lot 210512JLM)		+/-	30.2717	µg/mL	Unstressed
	Purity 99%			+/-	30.2717	µg/mL	Stressed
3	Phenol		1,002.3 µg/mL	+/-	5.8273	µg/mL	Gravimetric
	CAS # 108-95-2	(Lot MKCK1120)		+/-	30.3171	µg/mL	Unstressed
	Purity 99%			+/-	30.3171	µg/mL	Stressed
4	Aniline		1,000.7 µg/mL	+/-	5.8183	µg/mL	Gravimetric
	CAS # 62-53-3	(Lot K22Z462)		+/-	30.2700	µg/mL	Unstressed
	Purity 99%			+/-	30.2700	µg/mL	Stressed
5	Bis(2-chloroethyl)ether		1,001.1 µg/mL	+/-	5.8202	µg/mL	Gravimetric
	CAS # 111-44-4	(Lot SHBL6942)		+/-	30.2801	µg/mL	Unstressed
	Purity 99%			+/-	30.2801	µg/mL	Stressed
6	2-Chlorophenol		1,000.8 µg/mL	+/-	5.8186	µg/mL	Gravimetric
	CAS # 95-57-8	(Lot STBH7290)		+/-	30.2717	µg/mL	Unstressed
	Purity 99%			+/-	30.2717	µg/mL	Stressed
7	1,3-Dichlorobenzene		1,001.7 µg/mL	+/-	5.8241	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBZ7498)		+/-	30.3003	µg/mL	Unstressed
	Purity 99%			+/-	30.3003	µg/mL	Stressed

8	1,4-Dichlorobenzene CAS # 106-46-7 Purity 99%	(Lot MKBS4401V)	1,001.8 µg/mL	+/- +/- +/-	5.8244 30.3020 30.3020	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
9	Benzyl alcohol CAS # 100-51-6 Purity 99%	(Lot SHBK5943)	1,000.7 µg/mL	+/- +/- +/-	5.8183 30.2700 30.2700	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
10	1,2-Dichlorobenzene CAS # 95-50-1 Purity 99%	(Lot SHBK7741)	1,000.9 µg/mL	+/- +/- +/-	5.8193 30.2751 30.2751	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
11	2-Methylphenol (o-cresol) CAS # 95-48-7 Purity 99%	(Lot SHBH6379)	1,000.8 µg/mL	+/- +/- +/-	5.8189 30.2734 30.2734	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
12	2,2'-oxybis(1-chloropropane) CAS # 108-60-1 Purity 99%	(Lot 12308600)	1,001.5 µg/mL	+/- +/- +/-	5.8228 30.2936 30.2936	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
13	3-Methylphenol (m-cresol) CAS # 108-39-4 Purity 99%	(Lot SHBD0627V)	501.7 µg/mL	+/- +/- +/-	2.9238 15.1775 15.1775	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
14	4-Methylphenol (p-cresol) CAS # 106-44-5 Purity 99%	(Lot SHBL4411)	502.2 µg/mL	+/- +/- +/-	2.9264 15.1909 15.1909	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
15	N-Nitroso-di-n-propylamine CAS # 621-64-7 Purity 99%	(Lot 2D5VJ)	1,001.6 µg/mL	+/- +/- +/-	5.8235 30.2969 30.2969	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
16	Hexachloroethane CAS # 67-72-1 Purity 99%	(Lot ENSIK)	1,000.6 µg/mL	+/- +/- +/-	5.8176 30.2667 30.2667	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
17	Nitrobenzene CAS # 98-95-3 Purity 99%	(Lot MKCK4267)	1,001.4 µg/mL	+/- +/- +/-	5.8225 30.2919 30.2919	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
18	Isophorone CAS # 78-59-1 Purity 99%	(Lot MKCC9506)	1,002.2 µg/mL	+/- +/- +/-	5.8270 30.3154 30.3154	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
19	2-Nitrophenol CAS # 88-75-5 Purity 99%	(Lot BCCB2407)	1,002.0 µg/mL	+/- +/- +/-	5.8257 30.3087 30.3087	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
20	2,4-Dimethylphenol CAS # 105-67-9 Purity 99%	(Lot 10165155)	1,002.5 µg/mL	+/- +/- +/-	5.8286 30.3238 30.3238	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
21	Bis(2-chloroethoxy)methane CAS # 111-91-1 Purity 99%	(Lot 10991500)	1,002.0 µg/mL	+/- +/- +/-	5.8257 30.3087 30.3087	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
22	2,4-Dichlorophenol CAS # 120-83-2 Purity 99%	(Lot BCBZ6787)	1,000.2 µg/mL	+/- +/- +/-	5.8154 30.2549 30.2549	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
23	1,2,4-Trichlorobenzene CAS # 120-82-1 Purity 99%	(Lot SHBM0526)	1,001.6 µg/mL	+/- +/- +/-	5.8235 30.2969 30.2969	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

24	Naphthalene CAS # 91-20-3 Purity 99%	(Lot MKCH0219)	1,000.2 µg/mL	+/- +/- +/-	5.8154 30.2549 30.2549	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	4-Chloroaniline CAS # 106-47-8 Purity 99%	(Lot BCBJ1580V)	1,001.1 µg/mL	+/- +/- +/-	5.8202 30.2801 30.2801	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	Hexachlorobutadiene CAS # 87-68-3 Purity 98%	(Lot N21G023)	1,000.4 µg/mL	+/- +/- +/-	5.8162 30.2591 30.2591	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	4-Chloro-3-methylphenol CAS # 59-50-7 Purity 99%	(Lot STBC7309V)	1,000.8 µg/mL	+/- +/- +/-	5.8189 30.2734 30.2734	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	2-Methylnaphthalene CAS # 91-57-6 Purity 99%	(Lot STBG8884)	1,002.0 µg/mL	+/- +/- +/-	5.8257 30.3087 30.3087	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	1-Methylnaphthalene CAS # 90-12-0 Purity 99%	(Lot 5234.00-3)	1,000.3 µg/mL	+/- +/- +/-	5.8157 30.2566 30.2566	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	Hexachlorocyclopentadiene CAS # 77-47-4 Purity 99%	(Lot 0012015)	1,001.2 µg/mL	+/- +/- +/-	5.8209 30.2835 30.2835	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	2,4,6-Trichlorophenol CAS # 88-06-2 Purity 99%	(Lot STBJ5914)	1,002.2 µg/mL	+/- +/- +/-	5.8267 30.3137 30.3137	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	2,4,5-Trichlorophenol CAS # 95-95-4 Purity 98%	(Lot FHN01)	1,000.4 µg/mL	+/- +/- +/-	5.8162 30.2591 30.2591	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	2-Chloronaphthalene CAS # 91-58-7 Purity 99%	(Lot TWYRD)	1,001.4 µg/mL	+/- +/- +/-	5.8222 30.2902 30.2902	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	2-Nitroaniline CAS # 88-74-4 Purity 99%	(Lot MKCJ8895)	1,001.7 µg/mL	+/- +/- +/-	5.8238 30.2986 30.2986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	1,4-Dinitrobenzene CAS # 100-25-4 Purity 99%	(Lot STBF8844V)	1,000.8 µg/mL	+/- +/- +/-	5.8189 30.2734 30.2734	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	Acenaphthylene CAS # 208-96-8 Purity 98%	(Lot P06V)	1,000.1 µg/mL	+/- +/- +/-	5.8149 30.2526 30.2526	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	1,3-Dinitrobenzene CAS # 99-65-0 Purity 99%	(Lot 1-DXX-24-1)	1,000.4 µg/mL	+/- +/- +/-	5.8167 30.2616 30.2616	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	Dimethylphthalate CAS # 131-11-3 Purity 99%	(Lot 10117699)	1,000.9 µg/mL	+/- +/- +/-	5.8193 30.2751 30.2751	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	2,6-Dinitrotoluene CAS # 606-20-2 Purity 99%	(Lot BCBB8606)	1,000.2 µg/mL	+/- +/- +/-	5.8154 30.2549 30.2549	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	1,2-Dinitrobenzene CAS # 528-29-0 Purity 99%	(Lot MKCH6067)	1,000.0 µg/mL	+/- +/- +/-	5.8141 30.2482 30.2482	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
41	Acenaphthene CAS # 83-32-9 Purity 99%	(Lot MKCN0610)	1,002.4 µg/mL	+/- +/- +/-	5.8283 30.3221 30.3221	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
42	3-Nitroaniline CAS # 99-09-2 Purity 99%	(Lot MKCH5457)	1,000.9 µg/mL	+/- +/- +/-	5.8196 30.2768 30.2768	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
43	2,4-Dinitrophenol CAS # 51-28-5 Purity 99%	(Lot STBH7564)	1,002.2 µg/mL	+/- +/- +/-	5.8267 30.3137 30.3137	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
44	Dibenzofuran CAS # 132-64-9 Purity 99%	(Lot MKCN1772)	1,001.7 µg/mL	+/- +/- +/-	5.8238 30.2986 30.2986	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
45	2,4-Dinitrotoluene CAS # 121-14-2 Purity 99%	(Lot MKAA0690V)	1,001.6 µg/mL	+/- +/- +/-	5.8231 30.2952 30.2952	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
46	4-Nitrophenol CAS # 100-02-7 Purity 99%	(Lot MKCF6111)	1,000.7 µg/mL	+/- +/- +/-	5.8183 30.2700 30.2700	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
47	2,3,4,6-Tetrachlorophenol CAS # 58-90-2 Purity 99%	(Lot PR-30126)	1,000.9 µg/mL	+/- +/- +/-	5.8196 30.2768 30.2768	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
48	2,3,5,6-Tetrachlorophenol CAS # 935-95-5 Purity 99%	(Lot 012016)	1,001.3 µg/mL	+/- +/- +/-	5.8218 30.2885 30.2885	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
49	Fluorene CAS # 86-73-7 Purity 99%	(Lot 094650L18G)	1,002.6 µg/mL	+/- +/- +/-	5.8289 30.3255 30.3255	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
50	4-Chlorophenyl phenyl ether CAS # 7005-72-3 Purity 99%	(Lot MKCN1186)	1,001.8 µg/mL	+/- +/- +/-	5.8244 30.3020 30.3020	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
51	Diethylphthalate CAS # 84-66-2 Purity 99%	(Lot BCCD3396)	1,000.9 µg/mL	+/- +/- +/-	5.8193 30.2751 30.2751	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
52	4-Nitroaniline CAS # 100-01-6 Purity 99%	(Lot RP210713)	1,000.9 µg/mL	+/- +/- +/-	5.8196 30.2768 30.2768	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol) CAS # 534-52-1 Purity 99%	(Lot RP210716)	1,002.2 µg/mL	+/- +/- +/-	5.8270 30.3154 30.3154	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
54	Diphenylamine CAS # 122-39-4 Purity 99%	(Lot MKBN8295V)	1,000.6 µg/mL	+/- +/- +/-	5.8173 30.2650 30.2650	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
55	Azobenzene CAS # 103-33-3 Purity 99%	(Lot BCCB8438)	1,001.2 µg/mL	+/- +/- +/-	5.8212 30.2852 30.2852	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

56	4-Bromophenyl phenyl ether CAS # 101-55-3 Purity 99%	(Lot STBB9729V)	1,001.3 µg/mL	+/- +/- +/-	5.8218 30.2885 30.2885	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
57	Hexachlorobenzene CAS # 118-74-1 Purity 99%	(Lot SL210804)	1,000.2 µg/mL	+/- +/- +/-	5.8154 30.2549 30.2549	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
58	Pentachlorophenol CAS # 87-86-5 Purity 99%	(Lot 210706RSR)	1,000.5 µg/mL	+/- +/- +/-	5.8170 30.2633 30.2633	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
59	Phenanthrene CAS # 85-01-8 Purity 99%	(Lot MKCL7390)	1,000.8 µg/mL	+/- +/- +/-	5.8186 30.2717 30.2717	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
60	Anthracene CAS # 120-12-7 Purity 99%	(Lot MKCM0015)	1,001.9 µg/mL	+/- +/- +/-	5.8254 30.3070 30.3070	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
61	Carbazole CAS # 86-74-8 Purity 99%	(Lot 10812100)	1,000.7 µg/mL	+/- +/- +/-	5.8180 30.2684 30.2684	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
62	Di-n-butylphthalate CAS # 84-74-2 Purity 99%	(Lot MKCL9573)	1,001.6 µg/mL	+/- +/- +/-	5.8231 30.2952 30.2952	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
63	Fluoranthene CAS # 206-44-0 Purity 99%	(Lot MKCF7378)	1,000.4 µg/mL	+/- +/- +/-	5.8167 30.2616 30.2616	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
64	Pyrene CAS # 129-00-0 Purity 99%	(Lot BCCB9880)	1,001.1 µg/mL	+/- +/- +/-	5.8202 30.2801 30.2801	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
65	Benzyl butyl phthalate CAS # 85-68-7 Purity 99%	(Lot MKCM1987)	1,000.1 µg/mL	+/- +/- +/-	5.8147 30.2516 30.2516	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
66	Bis(2-ethylhexyl)adipate CAS # 103-23-1 Purity 99%	(Lot MKCM1988)	1,000.9 µg/mL	+/- +/- +/-	5.8196 30.2768 30.2768	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
67	Benz(a)anthracene CAS # 56-55-3 Purity 96%	(Lot RP210125)	1,000.7 µg/mL	+/- +/- +/-	5.8184 30.2708 30.2708	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
68	Chrysene CAS # 218-01-9 Purity 99%	(Lot STBJ1016)	1,001.6 µg/mL	+/- +/- +/-	5.8235 30.2969 30.2969	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
69	Bis(2-ethylhexyl)phthalate CAS # 117-81-7 Purity 99%	(Lot MKCJ1159)	1,002.1 µg/mL	+/- +/- +/-	5.8260 30.3104 30.3104	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
70	Di-n-octyl phthalate CAS # 117-84-0 Purity 99%	(Lot 11004300)	1,001.4 µg/mL	+/- +/- +/-	5.8222 30.2902 30.2902	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
71	Benzo(b)fluoranthene CAS # 205-99-2 Purity 99%	(Lot 012020B)	1,000.9 µg/mL	+/- +/- +/-	5.8193 30.2751 30.2751	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

72	Benzo(k)fluoranthene		1,001.3	µg/mL	+/-	5.8218	µg/mL	Gravimetric
	CAS #	207-08-9	(Lot 012019K)		+/-	30.2885	µg/mL	Unstressed
	Purity	99%			+/-	30.2885	µg/mL	Stressed
73	Benzo(a)pyrene		1,000.6	µg/mL	+/-	5.8173	µg/mL	Gravimetric
	CAS #	50-32-8	(Lot Z8BKF)		+/-	30.2650	µg/mL	Unstressed
	Purity	99%			+/-	30.2650	µg/mL	Stressed
74	Indeno(1,2,3-cd)pyrene		1,002.3	µg/mL	+/-	5.8277	µg/mL	Gravimetric
	CAS #	193-39-5	(Lot 1-RAK-33-4)		+/-	30.3188	µg/mL	Unstressed
	Purity	99%			+/-	30.3188	µg/mL	Stressed
75	Dibenz(a,h)anthracene		1,002.3	µg/mL	+/-	5.8273	µg/mL	Gravimetric
	CAS #	53-70-3	(Lot ER032211-01)		+/-	30.3171	µg/mL	Unstressed
	Purity	99%			+/-	30.3171	µg/mL	Stressed
76	Benzo(g,h,i)perylene		1,008.8	µg/mL	+/-	5.8651	µg/mL	Gravimetric
	CAS #	191-24-2	(Lot 8GFYJ)		+/-	30.5137	µg/mL	Unstressed
	Purity	99%			+/-	30.5137	µg/mL	Stressed
Solvent: Methylene chloride								
CAS # 75-09-2								
Purity 99%								

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant flow 1.8 mL/min.

Temp. Program:

80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

Inj. Temp:

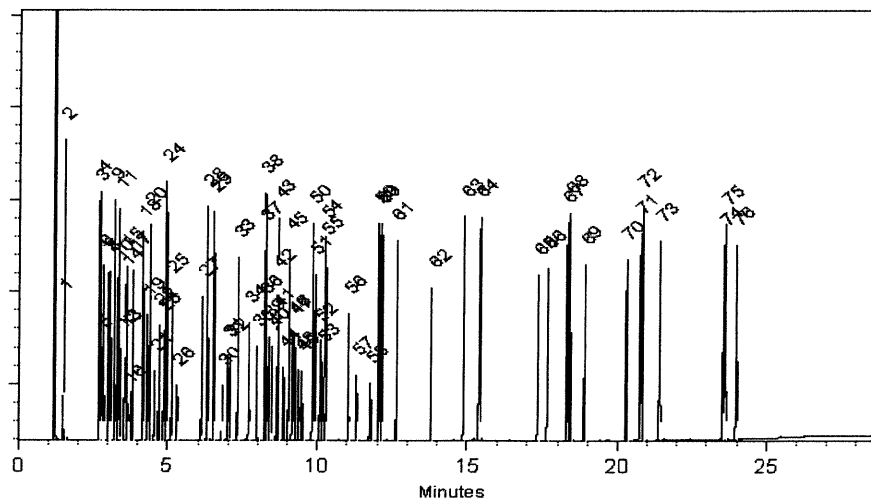
250°C

Det. Temp:

340°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis

Cathleen Soltis - Mix Technician

Date Mixed: 14-Sep-2021

Balance: 1128360905

Alexis Shelow

Alexis Shelow - Operations Tech I

Date Passed: 23-Sep-2021

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

- k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Gravimetric Certificate



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Received by CG

Catalog No.: 555224 **Lot No.:** A0178679

Description: Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size: 2 mL **Pkg Amt:** > 1 mL

Expiration Date: November 30, 2023 **Storage:** 10°C or colder

Ship: Ambient

ON

11/23/21

SI0066

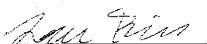
to

SI0095

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 95-94-3 (Lot MKCG5992)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
2	Acetophenone	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 98-86-2 (Lot STBH8205)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
3	Benzaldehyde	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 100-52-7 (Lot SHBG8690V)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
4	Benzoic acid	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 65-85-0 (Lot MKCL7479)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
5	Biphenyl	1,005.0 µg/mL	+/- 5.969395 µg/mL Gravimetric
	CAS # 92-52-4 (Lot MKCJ6240)		+/- 20.102261 µg/mL Unstressed
	Purity 99%		+/- 45.053875 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%


Lane Kibe - Mix Technician

Date Mixed: 18-Nov-2021

Balance: B345965662

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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Gravimetric Certificate



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Received by CG

Catalog No.: 555224 **Lot No.:** A0178679

Description: Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size: 2 mL **Pkg Amt:** > 1 mL

Expiration Date: November 30, 2023 **Storage:** 10°C or colder

Ship: Ambient

ON

11/23/21

SI0066

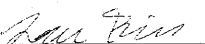
to

SI0095

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 95-94-3 (Lot MKCG5992)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
2	Acetophenone	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 98-86-2 (Lot STBH8205)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
3	Benzaldehyde	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 100-52-7 (Lot SHBG8690V)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
4	Benzoic acid	1,001.0 µg/mL	+/- 5.945637 µg/mL Gravimetric
	CAS # 65-85-0 (Lot MKCL7479)		+/- 20.022252 µg/mL Unstressed
	Purity 99%		+/- 44.874556 µg/mL Stressed
5	Biphenyl	1,005.0 µg/mL	+/- 5.969395 µg/mL Gravimetric
	CAS # 92-52-4 (Lot MKCJ6240)		+/- 20.102261 µg/mL Unstressed
	Purity 99%		+/- 45.053875 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%


Lane Kibe - Mix Technician

Date Mixed: 18-Nov-2021

Balance: B345965662

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 Lot No.: A0179300
Description : 1,4-dioxane
1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL Pkg Amt: > 1 mL
Expiration Date : December 31, 2026 Storage: 0°C or colder
Ship: Ambient

Received on
07/05/22
by
CG
S10542
to
S10571

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	1,4-Dioxane	2,004.0 µg/mL	+/- 11.7606 µg/mL Gravimetric
	CAS # 123-91-1 (Lot SHBM9675)		+/- 42.9357 µg/mL Unstressed
	Purity 99%		+/- 44.1822 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:

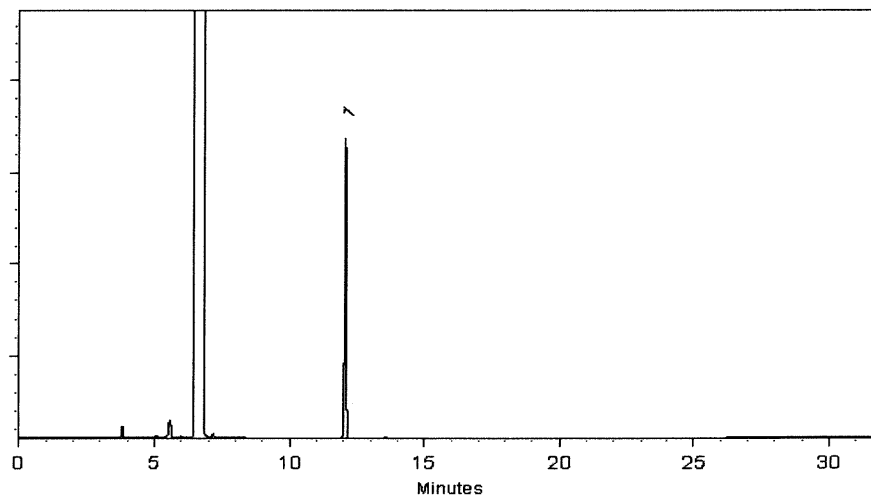
200°C

Det. Temp:

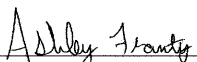
250°C

Det. Type:

FID

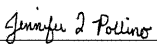


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Ashley Frantz - Quoting Technician

Date Mixed: 08-Dec-2021

Balance: B442140311


Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 10-Dec-2021

Manufactured under Restek's ISO 9001:2015
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Certificate #FM 80397



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31206 **Lot No.:** A0180950

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : December 31, 2027 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

Received on
07/05/22
by
CG
S10512
to
S10541

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dichlorobenzene-d4 CAS # 3855-82-1 (Lot PR-30447) Purity 99%	2,019.1 µg/mL	+/- 11.7390 µg/mL +/- 90.9400 µg/mL +/- 100.9091 µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 CAS # 1146-65-2 (Lot M-2180) Purity 99%	2,018.9 µg/mL	+/- 11.7379 µg/mL +/- 90.9310 µg/mL +/- 100.8991 µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 CAS # 15067-26-2 (Lot PR-30913) Purity 99%	2,018.8 µg/mL	+/- 11.7375 µg/mL +/- 90.9280 µg/mL +/- 100.8958 µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 CAS # 1517-22-2 (Lot PR-32303) Purity 99%	2,018.4 µg/mL	+/- 11.7352 µg/mL +/- 90.9099 µg/mL +/- 100.8758 µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 CAS # 1719-03-5 (Lot PR-30486) Purity 99%	2,018.7 µg/mL	+/- 11.7367 µg/mL +/- 90.9220 µg/mL +/- 100.8891 µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 CAS # 1520-96-3 (Lot PR-31716) Purity 99%	2,019.9 µg/mL	+/- 11.7437 µg/mL +/- 90.9760 µg/mL +/- 100.9491 µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

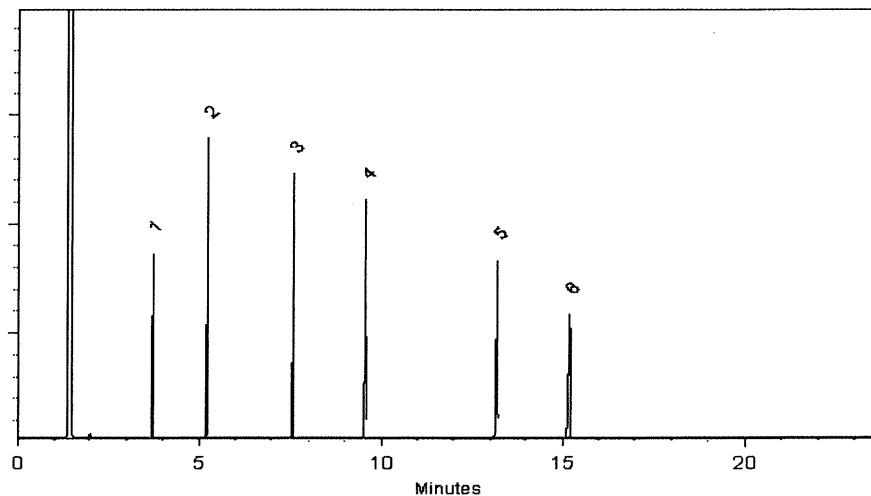
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Brittany Federinko - Operations Tech I

Date Mixed: 24-Jan-2022

Balance: 1128360905


Marlina Cowan - Operations Tech I

Date Passed: 27-Jan-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31206 **Lot No.:** A0180950

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : December 31, 2027 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

Received on
07/05/22
by
CG
S10512
to
S10541

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,4-Dichlorobenzene-d4 CAS # 3855-82-1 (Lot PR-30447) Purity 99%	2,019.1 µg/mL	+/- 11.7390 µg/mL +/- 90.9400 µg/mL +/- 100.9091 µg/mL	Gravimetric Unstressed Stressed
2	Naphthalene-d8 CAS # 1146-65-2 (Lot M-2180) Purity 99%	2,018.9 µg/mL	+/- 11.7379 µg/mL +/- 90.9310 µg/mL +/- 100.8991 µg/mL	Gravimetric Unstressed Stressed
3	Acenaphthene-d10 CAS # 15067-26-2 (Lot PR-30913) Purity 99%	2,018.8 µg/mL	+/- 11.7375 µg/mL +/- 90.9280 µg/mL +/- 100.8958 µg/mL	Gravimetric Unstressed Stressed
4	Phenanthrene-d10 CAS # 1517-22-2 (Lot PR-32303) Purity 99%	2,018.4 µg/mL	+/- 11.7352 µg/mL +/- 90.9099 µg/mL +/- 100.8758 µg/mL	Gravimetric Unstressed Stressed
5	Chrysene-d12 CAS # 1719-03-5 (Lot PR-30486) Purity 99%	2,018.7 µg/mL	+/- 11.7367 µg/mL +/- 90.9220 µg/mL +/- 100.8891 µg/mL	Gravimetric Unstressed Stressed
6	Perylene-d12 CAS # 1520-96-3 (Lot PR-31716) Purity 99%	2,019.9 µg/mL	+/- 11.7437 µg/mL +/- 90.9760 µg/mL +/- 100.9491 µg/mL	Gravimetric Unstressed Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

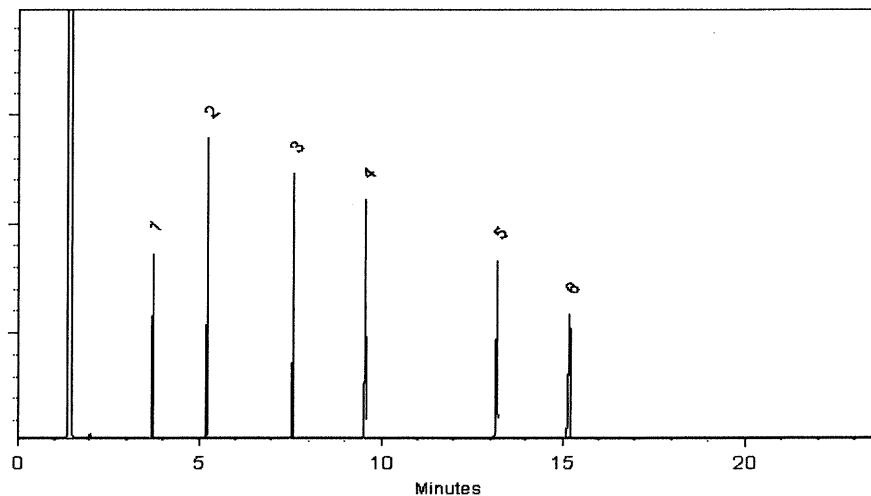
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Brittany Federinko - Operations Tech I

Date Mixed: 24-Jan-2022

Balance: 1128360905


Marlina Cowan - Operations Tech I

Date Passed: 27-Jan-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Received on
03/10/22
by
CG
S10242
to
S10247

Catalog No. : 31615 **Lot No.:** A0182667
Description : GC/MS Tuning Mixture
GC/MS Tuning Mixture 1,000µg/mL, Methylene Chloride, 1mL/ampul
Container Size : 2 mL **Pkg Amt:** > 1 mL
Expiration Date : March 31, 2025 **Storage:** 10°C or colder
Handling: Contains carcinogen/reproductive toxin. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Pentachlorophenol CAS # 87-86-5 (Lot 211229RSR) Purity 99%	1,003.6 µg/mL	+/- 5.8897 µg/mL Gravimetric +/- 45.7132 µg/mL Unstressed +/- 66.0037 µg/mL Stressed
2	DFTPP (Decafluorotriphenylphosphine) CAS # 5074-71-5 (Lot Q117-147) Purity 95%	1,006.6 µg/mL	+/- 5.9074 µg/mL Gravimetric +/- 45.8508 µg/mL Unstressed +/- 66.2023 µg/mL Stressed
3	Benzidine CAS # 92-87-5 (Lot 211228JLM) Purity 99%	1,008.4 µg/mL	+/- 5.9179 µg/mL Gravimetric +/- 45.9318 µg/mL Unstressed +/- 66.3193 µg/mL Stressed
4	4,4'-DDT CAS # 50-29-3 (Lot 210916JLM) Purity 99%	1,007.6 µg/mL	+/- 5.9132 µg/mL Gravimetric +/- 45.8954 µg/mL Unstressed +/- 66.2667 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:

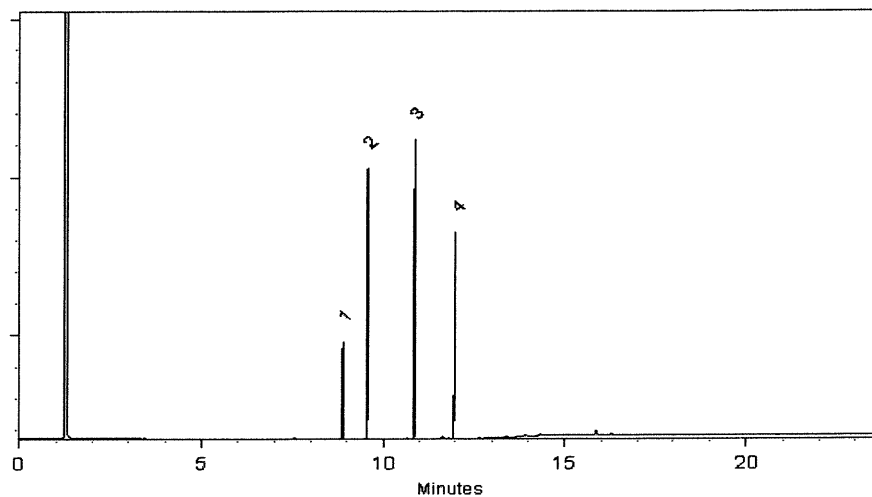
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Morgan Craighead - Mix Technician

Date Mixed: 08-Mar-2022

Balance: B345965662

Marlene Cowan - Operations Tech I

Date Passed: 10-Mar-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



CERTIFIED REFERENCE MATERIAL

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Certificate of Analysis



ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01



ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31086 **Lot No.:** A0186198
Description : B/N Surrogate Mix (4/89 SOW)
Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul
Container Size : 5 mL **Pkg Amt:** > 5 mL
Expiration Date : May 31, 2028 **Storage:** 10°C or colder
Handling: Sonicate prior to use. **Ship:** Ambient

Received
on
08/16/22
by
CG
\$10595
+0
\$10624

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Nitrobenzene-d5 CAS # 4165-60-0 (Lot PR-29940A) Purity 99%	5,019.7 µg/mL	+/- 29.1848 µg/mL Gravimetric +/- 226.0888 µg/mL Unstressed +/- 250.8734 µg/mL Stressed
2	2-Fluorobiphenyl CAS # 321-60-8 (Lot 00021384) Purity 99%	5,011.8 µg/mL	+/- 29.1387 µg/mL Gravimetric +/- 225.7322 µg/mL Unstressed +/- 250.4778 µg/mL Stressed
3	p-Terphenyl-d14 CAS # 1718-51-0 (Lot PR-30504) Purity 99%	5,015.0 µg/mL	+/- 29.1576 µg/mL Gravimetric +/- 225.8786 µg/mL Unstressed +/- 250.6402 µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:

Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Column:

30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:

hydrogen-constant pressure 10 psi.

Temp. Program:

40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:

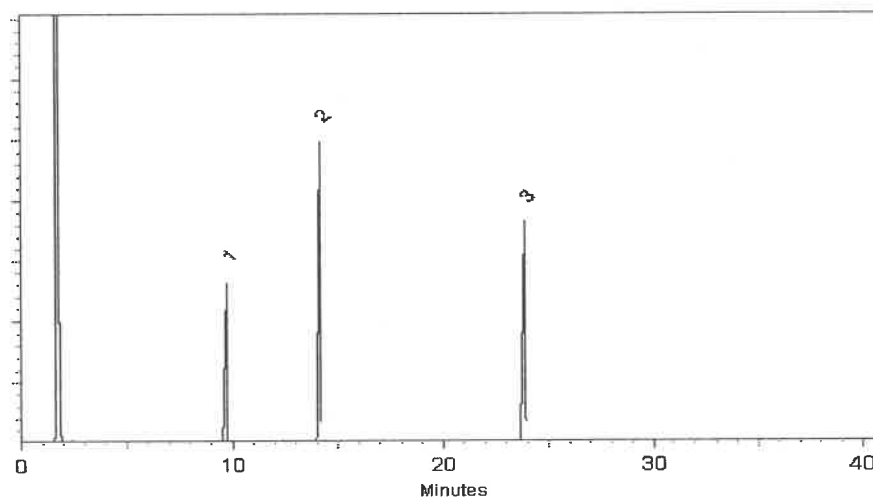
250°C

Det. Temp:

330°C

Det. Type:

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Jess Hoy - Operations Tech I

Date Mixed: 10-Jun-2022

Balance: 1128353505


Christie Mills - Operations Tech II - ARM QC

Date Passed: 15-Jun-2022

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



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CERTIFIED REFERENCE MATERIAL

Gravimetric Certificate



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555223 **Lot No.:** A0188685

Description : Custom 8270 Plus Standard #1
Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2024 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

Received
on
08/23/22
by
CG
S10648
to
S10677

CERTIFIED VALUES

Component #	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	3,3'-Dichlorobenzidine	1,005.0 µg/mL	+/- 5.9694	µg/mL Gravimetric
	CAS # 91-94-1 (Lot 220223RSR)		+/- 46.1808	µg/mL Unstressed
	Purity 99%		+/- 47.3621	µg/mL Stressed
2	Atrazine	1,001.0 µg/mL	+/- 5.9456	µg/mL Gravimetric
	CAS # 1912-24-9 (Lot PI8FG)		+/- 45.9970	µg/mL Unstressed
	Purity 99%		+/- 47.1736	µg/mL Stressed
3	Benzidine	1,004.0 µg/mL	+/- 5.9635	µg/mL Gravimetric
	CAS # 92-87-5 (Lot 220511RSR)		+/- 46.1348	µg/mL Unstressed
	Purity 99%		+/- 47.3150	µg/mL Stressed
4	epsilon-Caprolactam	1,001.0 µg/mL	+/- 5.9456	µg/mL Gravimetric
	CAS # 105-60-2 (Lot I16X016)		+/- 45.9970	µg/mL Unstressed
	Purity 99%		+/- 47.1736	µg/mL Stressed

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%


Cathleen Soltis - Mix Technician

Date Mixed: 17-Aug-2022

Balance: 1128353505

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397



CERTIFICATE OF ANALYSIS

Product Name Sodium Hydroxide
Grade Reagent ACS Grade
Catalog # 289000ACS
Item # 101007
Batch # 220601-B017657
Date of Manufacture: 04/06/2022
Recommended Retest Date: 04/05/2025
Customer PO # 6051379
Packaging Type Drum Fiber 50 Kg

TEST	MONO-GRAPH	SPECIFICATION	RESULT	UNITS
Assay	ACS	NLT 97.0%	98.7	%
Calcium (Ca)	ACS	0.005%, max	LT 0.005%	N/A
Chloride (Cl)	ACS	0.005% max.	LT 0.005%	N/A
Heavy Metals (as Ag)	ACS	0.002% max	LT 0.002%	N/A
Iron (Fe)	ACS	0.001% max.	LT 0.001%	N/A
Magnesium (Mg)	ACS	0.002% max.	LT 0.002%	N/A
Mercury (Hg)	ACS	0.1 ppm max.	LT 0.1 ppm	N/A
Nickel (Ni)	ACS	0.001%, max	LT 0.001%	N/A
Nitrogen Compounds (as N)	ACS	0.001% max.	LT 0.001%	N/A
Phosphate (PO ₄)	ACS	0.001% max.	LT 0.001%	N/A
Potassium (K)	ACS	0.02% max.	LT 0.02%	N/A
Sodium Carbonate (Na ₂ CO ₃)	ACS	1.0% max.	0.6	%
Sulfate (SO ₄)	ACS	0.003% max.	LT 0.003%	N/A

Certification and Compliance Statements

This product is not derived, nor does it come in contact with, any materials derived from bovine or other animal sources.

E 3382

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Form: CofA-Standard, Rev 1.6, 04/13/22, RAD

Recd. by R1 on 08/03/22

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)



Material No.: 9266-A4
Batch No.: 22G1962004
Manufactured Date: 2022-06-22
Expiration Date: 2023-09-21
Revision No.: 0

Certificate of Analysis

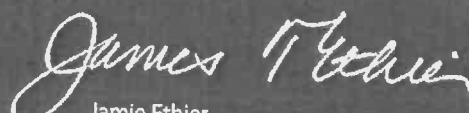
Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	2
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	$\leq 1.0 \text{ ppm}$	0.1 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	< 0.1
Chloride (Cl)	$\leq 10 \text{ ppm}$	5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 0.01 %

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

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

Recd. by R on 9/13/22

E 3397


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

Page 1 of 1



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



MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MÉXICO
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 :** Na₂SO₄
SPECIFICATION NUMBER : 6399 **RELEASE DATE:** OCT/28/2021
LOT NUMBER : 139404

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na ₂ SO ₄)	Min. 99.0%	99.8 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.0
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO ₄)	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.002 %
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%	0.2 %
Retained on US Standard No. 60 sieve	Min. 94%	97.6 %
Through US Standard No. 60 sieve	Max. 5%	2.1 %
Through US Standard No. 100 sieve	Max. 10%	0.2 %
COMMENTS		
 QC: PhC Irma Belmares		

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

E 3412

Recd. by RP on 10/13/22

RE-02-01, Ed. 3

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis



Material No.: 9254-03
Batch No.: 22E1562001
Manufactured Date: 2022-05-03
Expiration Date: 2025-05-02
Revision No.: 0

Certificate of Analysis

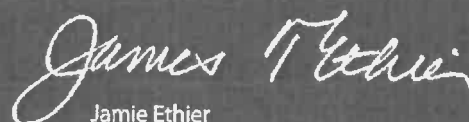
Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.8 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	< 1.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.1 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

Recd. by RP on 11/3/22

E3425



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

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis



Material No.: 9254-03
Batch No.: 22E1562001
Manufactured Date: 2022-05-03
Expiration Date: 2025-05-02
Revision No.: 0

Certificate of Analysis

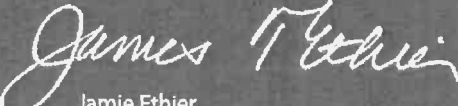
Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.8 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	< 1.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.1 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

Recd. by RPA 11/16/22

E 3430


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

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Page 1 of 1

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)



Material No.: 9266-A4
Batch No.: 2212962012
Manufactured Date: 2022-09-10
Expiration Date: 2023-12-10
Revision No.: 0

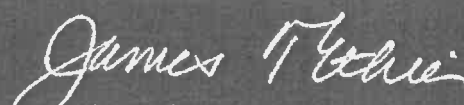
Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	2
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	2
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	$\leq 1.0 \text{ ppm}$	< 0.1 ppm
Titration Acid ($\mu\text{eq/g}$)	≤ 0.3	< 0.1
Chloride (Cl)	$\leq 10 \text{ ppm}$	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	0.01 %

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

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

E 3432


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

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Page 1 of 1

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)



Material No.: 9266-A4
Batch No.: 22J1962006
Manufactured Date: 2022-09-23
Expiration Date: 2023-12-23
Revision No.: 0

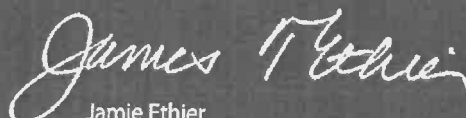
Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	3
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	6
Assay (CH ₂ Cl ₂) (by GC, exclusive of preservative, corrected for water)	$\geq 99.8 \%$	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.1 ppm
Titration Acid (μ eq/g)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	< 5 ppm
Water (by KF, coulometric)	$\leq 0.02 \%$	< 0.01 %

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

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

E 3446


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

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Page 1 of 1

Sulfuric Acid

BAKER INSTRA-ANALYZED® Reagent

For Trace Metal Analysis

Low Selenium

avantorsm



Material No.: 9673-33

Batch No.: 0000250349

Manufactured Date: 2019/12/17

Retest Date: 2024/12/15

Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (H ₂ SO ₄)	95.0 - 98.0 %	96.5
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS - Substances Reducing Permanganate (as SO ₂)	<= 2 ppm	< 2
Ammonium (NH ₄)	<= 1 ppm	< 1
Chloride (Cl)	<= 0.1 ppm	< 0.1
Nitrate (NO ₃)	<= 0.2 ppm	< 0.1
Phosphate (PO ₄)	<= 0.5 ppm	< 0.1
Trace Impurities - Aluminum (Al)	<= 30.0 ppb	0.2
Arsenic and Antimony (as As)	<= 4 ppb	< 2
Trace Impurities - Barium (Ba)	<= 10.0 ppb	< 1.0
Trace Impurities - Beryllium (Be)	<= 10.0 ppb	< 1.0
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 10.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 2.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	2.9
Trace Impurities - Chromium (Cr)	<= 6.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 0.5 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 10.0 ppb	< 1.0
Trace Impurities - Germanium (Ge)	<= 10.0 ppb	< 10.0
Trace Impurities - Gold (Au)	<= 10.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 500 ppb	< 100

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

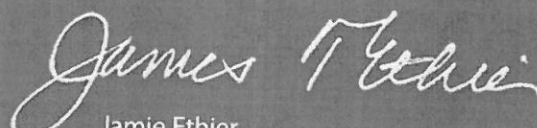
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Material No.: 9673-33
Batch No.: 0000250349

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

For Laboratory, Research or Manufacturing Use

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


Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
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