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

Prep Standard - Chemical Standard Summary

Order ID : N3259

Test : PESTICIDE Group1

Prepbatch ID : PB145434,

Sequence ID/Qc Batch ID: pl060922,PL061022,

Standard ID :
EP2247,PP19654,PP19729,PP19731,PP19746,PP19747,PP19748,PP19749,PP19750,PP19751,PP19752,PP19753,PP19754,PP19755,PP19756,PP19757,PP19758,PP19759,PP19760,PP19761,PP19762,PP19763,PP19764,PP19831,PP19950,

Chemical ID :
E3284,E3285,E3296,E3316,E3339,E3341,P10213,P10330,P8488,P9647,P9652,

CHEMTECH

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2247	05/28/2022	10/01/2022	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 05/28/2022

FROM 4000.00000gram of E3296 = Final Quantity: 4000.000 gram

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
84	Pest/PCB Surrogate Stock 20 PPM	PP19654	03/08/2022	09/08/2022	Ankita Jodhani	None	None	Yogesh Patel 03/09/2022

FROM 1.00000ml of P10213 + 9.00000ml of E3284 = Final Quantity: 10.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1472	20 PPM Pest Stock Solution 2nd Source	PP19729	03/10/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 1.00000ml of P9652 + 9.00000ml of E3284 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3663	20 PPM MIREX Stock STD (Secondary source)	PP19731	03/10/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 1.00000ml of P9647 + 9.00000ml of E3284 = Final Quantity: 10.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3629	20 PPM PEST stock Solution 1st source(RESTEK)	PP19746	03/10/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 1.00000ml of P9652 + 9.00000ml of E3284 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1273	20 PPM Mirex Stock (Primary Source)	PP19747	03/10/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.20000ml of P9647 + 9.80000ml of E3284 = Final Quantity: 10.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3630	100/100 PPB PEST Working std.1st Source(RESTEK)	PP19748	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 98.50000ml of E3284 + 0.50000ml of PP19654 + 0.50000ml of PP19746 + 0.50000ml of PP19747 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3631	75 PPB ICAL PEST STD(RESTEK)	PP19749	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.25000ml of E3284 + 0.75000ml of PP19748 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3632	50 PPB ICAL PEST STD(RESTEK)	PP19750	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.50000ml of E3284 + 0.50000ml of PP19748 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3633	25 PPB ICAL PEST STD(RESTEK)	PP19751	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.75000ml of E3284 + 0.25000ml of PP19748 = Final Quantity: 1.000 ml

CHEMTECH

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3634	5 PPB ICAL PEST STD(RESTEK)	PP19752	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.90000ml of E3284 + 0.10000ml of PP19750 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
386	1000/100 PPB Chlordane STD (Restek)	PP19753	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.10000ml of P8488 + 99.40000ml of E3284 + 0.50000ml of PP19654 = Final Quantity: 100.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
528	CHLOR 750 PPB STD	PP19754	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.25000ml of E3284 + 0.75000ml of PP19753 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
529	CHLOR 500 PPB STD	PP19755	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.50000ml of E3284 + 0.50000ml of PP19753 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
530	CHLOR 250 PPB STD	PP19756	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.75000ml of E3284 + 0.25000ml of PP19753 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3408	CHLOR 50 PPB STD	PP19757	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.90000ml of E3284 + 0.10000ml of PP19755 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
383	1000/100 PPB Toxaphene STD (Restek)	PP19758	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.10000ml of P10330 + 99.40000ml of E3284 + 0.50000ml of PP19654 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
533	TOX 750 PPB STD	PP19759	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.25000ml of E3284 + 0.75000ml of PP19758 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
534	TOX 500 PPB STD	PP19760	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.50000ml of E3284 + 0.50000ml of PP19758 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
535	TOX 250 PPB STD	PP19761	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.75000ml of E3284 + 0.25000ml of PP19758 = Final Quantity: 1.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2217	TOX 100 PPB STD	PP19762	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.90000ml of E3284 + 0.10000ml of PP19758 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
80	100/100 PPB Pesticide Working Solution 2nd Source	PP19763	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 98.50000ml of E3284 + 0.50000ml of PP19654 + 0.50000ml of PP19729 + 0.50000ml of PP19731 = Final Quantity: 100.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3988	50 PPB PEST ICV STD(RESTEK)	PP19764	03/11/2022	09/08/2022	Abdul Mirza	None	None	Ankita Jodhani 03/11/2022

FROM 0.50000ml of E3284 + 0.50000ml of PP19763 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
840	12.5 PPB Pest-608 Spike (Restek)	PP19831	03/21/2022	09/08/2022	Abdul Mirza	None	None	Sohil Jodhani 03/23/2022

FROM 99.87500ml of E3285 + 0.06250ml of PP19729 + 0.06250ml of PP19731 = Final Quantity: 100.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1638	20 PPB Pest/PCB Surg Spike	PP19950	04/25/2022	09/08/2022	Abdul Mirza	None	None	Yogesh Patel 05/05/2022

FROM 249.75000ml of E3316 + 0.25000ml of PP19654 = Final Quantity: 250.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	21K1662002	09/08/2022	03/08/2022 / Rajesh	03/02/2022 / Rajesh	E3284

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)	0000285502	09/25/2022	03/15/2022 / Rajesh	03/10/2022 / Rajesh	E3285

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	125102	10/01/2022	04/01/2022 / Rajesh	03/28/2022 / Rajesh	E3296

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)	21J3062001	10/21/2022	04/21/2022 / Rajesh	04/20/2022 / Rajesh	E3316

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)	22D1462024	11/28/2022	05/28/2022 / Rajesh	05/13/2022 / Rajesh	E3339

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)	22B0762004	12/02/2022	06/02/2022 / Rajesh	06/01/2022 / Rajesh	E3341

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32000 / Pesticide Mix, CLP method, Pesticide Surrogate Mix, 200ug/mL, Acetone, 1mL	A0166555	09/08/2022	03/08/2022 / Ankita	01/19/2021 / Abdul	P10213

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32005 / Toxaphene Standard	A0163125	09/11/2022	03/11/2022 / Abdul	03/04/2021 / Abdul	P10330

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32021 / Pesticide Mix, chlordane (technical), 1000ug/mL, hexane, 1mL,	A0144623	09/11/2022	03/11/2022 / Abdul	05/09/2019 / Ankita	P8488

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	79136 / Mirex, 1000 ug/ml	061820	09/10/2022	03/10/2022 / Abdul	06/19/2020 / Sohil	P9647

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32291 / Pesticide Mix, CLP method, organochlorine Std AB#1, 200ug/mL, hexane/toluene, 1mL/ampul	A0154466	09/10/2022	03/10/2022 / Abdul	06/22/2020 / Sohil	P9652

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

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Material No.: 9262-03
Batch No.: 21K1662002
Manufactured Date: 2021-10-19
Expiration Date: 2023-01-18
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	3
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	< 1
Assay (Total Saturated C_6 Isomers) (by GC, corrected for water)	≥ 99.5 %	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	98 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	< 0.1 ppm
Substances Darkened by H_2SO_4	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	< 0.01 %

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD
Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

E 3284

Recd. by RB on 3/2/22

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

Acetone
ULTRA RESI-ANALYZED
For Organic Residue Analysis

avantor™ | J.T.Baker®

Material No.: 9254-03
Batch No.: 0000285502
Manufactured Date: 2021/02/03
Expiration Date: 2024/02/03
Revision No: 1

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	>= 99.4 %	99.7
Color (APHA)	<= 10	10
Residue after Evaporation	<= 1.0000 ppm	0.1000
Substances Reducing Permanganate	Passes Test	PT
Titrable Acid (µeq/g)	<= 0.3	0.2
Titrable Base (µeq/g)	<= 0.6	< 0.1
Water (H_2O)	<= 0.5 %	0.3
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	<= 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	<= 10	1

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

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

Recd by RP on 3/10/22

E3285

James T Ethier
Jamie Ethier
Vice President Global Quality

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

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na_2SO_4
SPECIFICATION NUMBER :	6399	RELEASE DATE:	JUL/22/2021
LOT NUMBER :	125102		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_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 foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.33 %
Retained on US Standard No. 60 sieve	Min. 94%	97.40 %
Through US Standard No. 60 sieve	Max. 5%	2.04 %
Through US Standard No. 100 sieve	Max. 10%	0.23 %

COMMENTS

E3296

QC: PhC Irma Belmares

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

PO: 220330-01 PRODUCT CODE: SHIP DATE: 4/6/2022

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker

Material No.: 9254-03
Batch No.: 21J3062001
Manufactured Date: 2021-09-20
Expiration Date: 2024-09-19
Revision No.: 0

Certificate of Analysis

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

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 4/20/22

E3316

James T Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
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Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor™ | J.T.Baker®

Material No.: 9266-A4
Batch No.: 22D1462024
Manufactured Date: 2022-03-12
Expiration Date: 2023-06-11
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	1
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	≥ 99.8 %	100.0 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	< 0.1
Chloride (Cl)	≤ 10 ppm	5 ppm
Water (by KF, coulometric)	≤ 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

E3339

James T Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
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Hexanes (95% n-hexane)
BAKER RESI-ANALYZED® Reagent

avantor™ | J.T.Baker®

Material No.: 9262-03
Batch No.: 22B0762004
Manufactured Date: 2021-11-24
Expiration Date: 2023-02-23
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	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	< 1
Assay (Total Saturated C_6 Isomers) (by GC, corrected for water)	≥ 99.5 %	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	98 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	< 0.1 ppm
Substances Darkened by H_2SO_4	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	< 0.01 %

For Laboratory, Research, or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD
Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Recd. by RP on 6/1/22.

E 3341

James T Ethier
Jamie Ethier
Vice President Global Quality

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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. : 32000 **Lot No.:** A0166555

Description : Pesticide Surrogate Mix

Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul

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

Expiration Date : February 28, 2027 **Storage:** 10°C or colder

Handling: Contains PCBs - sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2,4,5,6-Tetrachloro-m-xylene **CAS #** 877-09-8 (Lot 0052481) **Purity** 98%	200.2 µg/mL	+/- 1.1807 +/- 6.3448 +/- 8.2879	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Decachlorobiphenyl (BZ# 209) **CAS #** 2051-24-3 (Lot ER071509-01) **Purity** 99%	200.1 µg/mL	+/- 1.1804 +/- 6.3431 +/- 8.2856	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: Acetone
CAS # 67-64-1
Purity 99%

P10206 → P10215 (P.10206 To P.10215) AR 01/19

AR 01/19/2021

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

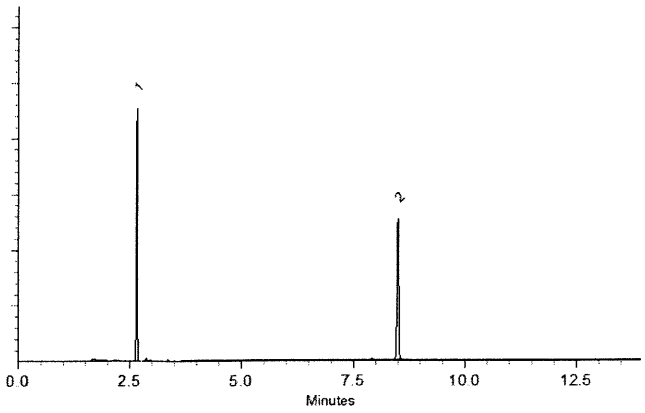
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



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 McGinnl - Operations Tech I

Date Mixed: 19-Nov-2020 **Balance:** B442140311

Justine Albertson - Operations Tech-ARM QC

Date Passed: 24-Nov-2020

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

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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. : 32005 **Lot No.:** A0163125

Description : Toxaphene Standard

toxaphene 1000µg/mL, Hexane, 1mL/ampul

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

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

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Toxaphene	1,004.7 µg/mL	+/- 5.9674	µg/mL	Gravimetric
	CAS # 8001-35-2 (Lot 0006532154)		+/- 31.8552	µg/mL	Unstressed
	Purity ----%		+/- 41.6063	µg/mL	Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

P10326
P10330
AR
03/5/21

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

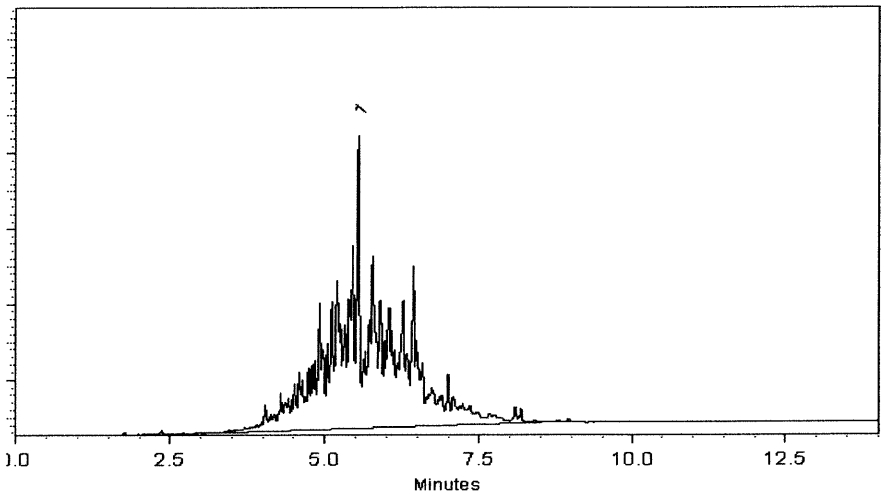
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



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.

Miranda Kline

Miranda Kline - Operations Technician I

Date Mixed: 31-Jul-2020 **Balance:** B345965662

Jennifer J Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 04-Aug-2020

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

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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. : 32021 **Lot No.:** A0144623

Description : Chlordane Standard

Chlordane Standard 1000µg/mL, Hexane, 1mL/ampul

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

Expiration Date : April 30, 2025 **Storage:** 10°C or colder

P8484 ↓ P6488 AJ 05/09/19

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Chlordane	1,010.0 µg/mL	+/- 5.9272	µg/mL	Gravimetric
	CAS # 57-74-9 (Lot 142990)		+/- 32.0109	µg/mL	Unstressed
	Purity ----%		+/- 41.8169	µg/mL	Stressed

Solvent: Hexane
CAS # 110-54-3
Purity 99%

Tech Tips:
CAS #57-74-9 nomenclature is based on EPA method 8081B.

Column:
30m x .25mm x .2um
Rtx-CLP II (cat.# 11323)

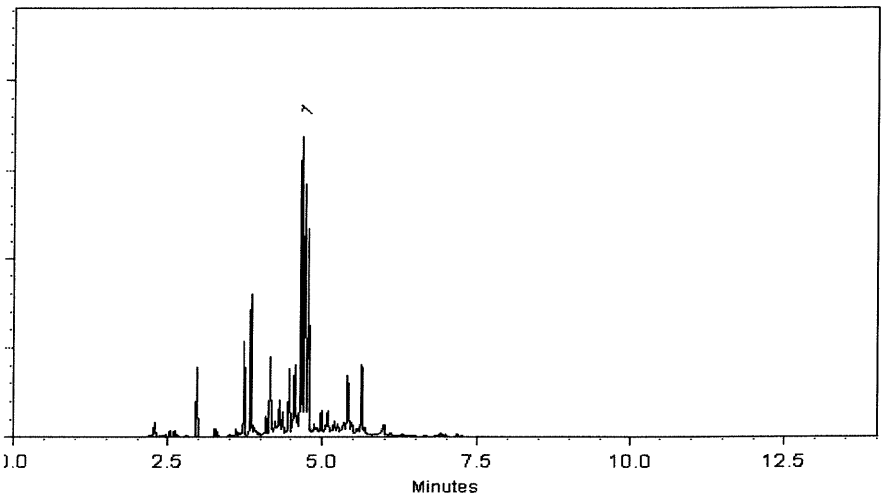
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
200°C to 300°C
@ 25°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



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.

Maggie Wang
Maggie Wang - Operations Technician I

Date Mixed: 04-Jan-2019 **Balance:** B251644995

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 09-Jan-2019

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:

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

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)	< 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.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

P9644, P9645, P9646, P9647, P9648

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

Received by: SJ 6/19/2020

CERTIFIED WEIGHT REPORT

Part Number: 79136
Lot Number: 061820
Description: Mirex

Solvent(s): **Lot#**
Acetone 81025

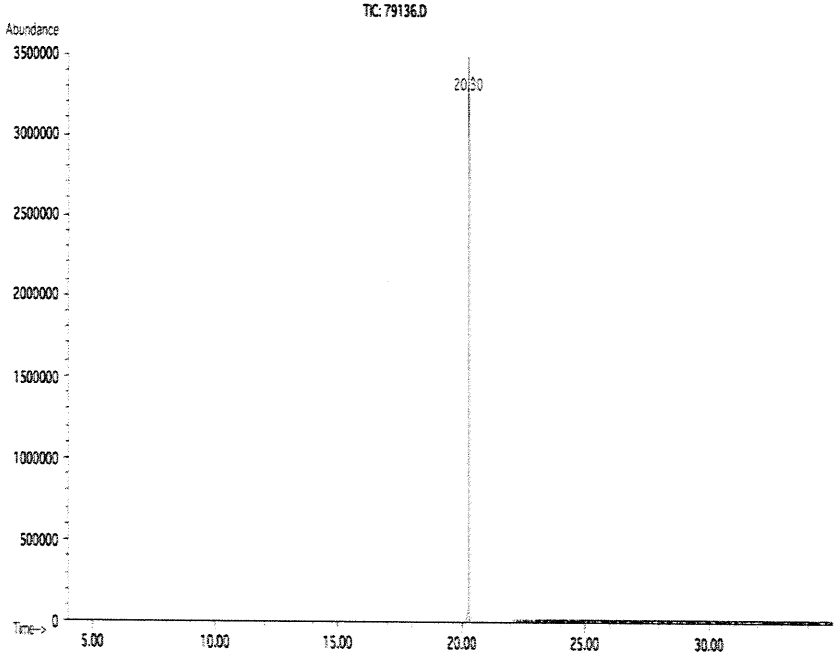
Expiration Date: 061825
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 23060

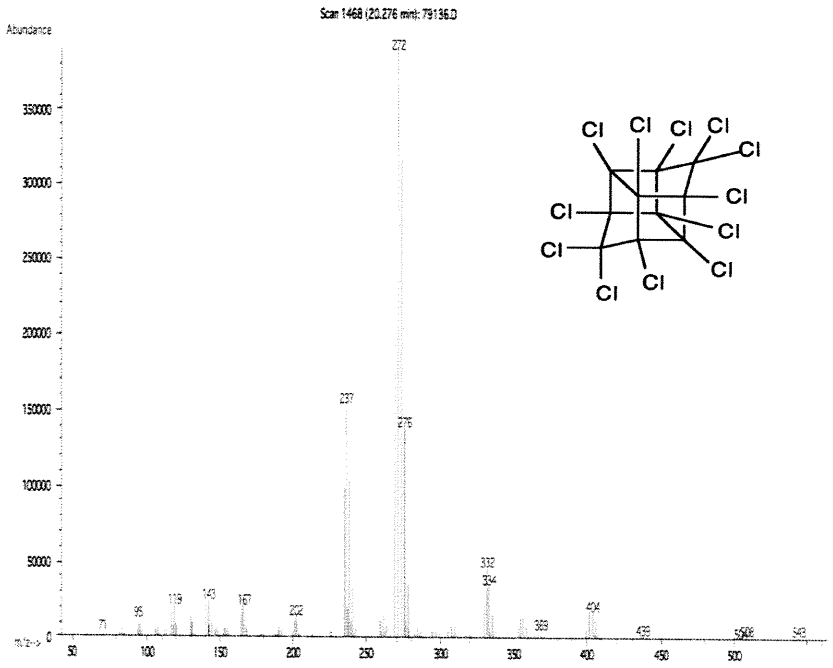
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 50.0 0.001 Flask Uncertainty

	061820	
Formulated By:	Benson Chan	DATE
	061820	
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)	Actual Weight (g)	Actual Conc(µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Mirex	437	9492400	1000	99.4	0.5	0.05030	0.05030	1000.0	10.3	2385-85-5	N/A	orl-rat 306mg/kg

Method GC7MSD-1.M: Column: SPB-608 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 150°C (4min.), Temp 2 = 290°C (13.5 min.), Rate = 8°C/min., Injector B= 200°C, Detector B = 290°C. Split Ratio = 100:1, Scan Rate = 2. Analysis performed by Candice Warren.





- **The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.**
- **Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).**
- **Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.**
- **All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.**
- **Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).**

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P9649 P9654
P9650 P9655
P9651 P9656
P9652 P9657
P9653 P9658

SJ 6/22/2020

Catalog No. : 32291 **Lot No.:** A0154466

Description : Organochlorine Pesticide Mix AB #1

Organochlorine Pesticide Mix AB #1 200µg/mL, Hexane/Toluene(50:50), 1mL/ampul

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

Expiration Date : October 31, 2023 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	alpha-BHC **CAS #** 319-84-6 (Lot 0012018BHC) **Purity** 99%	201.6 µg/mL	+/- 1.1974 µg/mL +/- 9.1846 µg/mL +/- 13.2599 µg/mL	Gravimetric Unstressed Stressed
2	gamma-BHC (Lindane) **CAS #** 58-89-9 (Lot 8521900) **Purity** 99%	201.6 µg/mL	+/- 1.1974 µg/mL +/- 9.1846 µg/mL +/- 13.2599 µg/mL	Gravimetric Unstressed Stressed
3	beta-BHC **CAS #** 319-85-7 (Lot BCBS8692V) **Purity** 99%	200.0 µg/mL	+/- 1.1879 µg/mL +/- 9.1117 µg/mL +/- 13.1547 µg/mL	Gravimetric Unstressed Stressed
4	delta-BHC **CAS #** 319-86-8 (Lot ER02101401) **Purity** 99%	200.0 µg/mL	+/- 1.1879 µg/mL +/- 9.1117 µg/mL +/- 13.1547 µg/mL	Gravimetric Unstressed Stressed
5	Heptachlor **CAS #** 76-44-8 (Lot 0006467453) **Purity** 98%	200.3 µg/mL	+/- 1.1898 µg/mL +/- 9.1259 µg/mL +/- 13.1752 µg/mL	Gravimetric Unstressed Stressed
6	Aldrin **CAS #** 309-00-2 (Lot 8737100) **Purity** 96%	200.1 µg/mL	+/- 1.1883 µg/mL +/- 9.1146 µg/mL +/- 13.1589 µg/mL	Gravimetric Unstressed Stressed
7	Heptachlor epoxide (isomer B) **CAS #** 1024-57-3 (Lot 8666700) **Purity** 99%	200.0 µg/mL	+/- 1.1879 µg/mL +/- 9.1117 µg/mL +/- 13.1547 µg/mL	Gravimetric Unstressed Stressed

8	trans-Chlordane		201.2	µg/mL	+/-	1.1951	µg/mL	Gravimetric
	CAS # 5103-74-2	(Lot ER06190604)			+/-	9.1664	µg/mL	Unstressed
	Purity 99%				+/-	13.2336	µg/mL	Stressed
9	cis-Chlordane		201.2	µg/mL	+/-	1.1951	µg/mL	Gravimetric
	CAS # 5103-71-9	(Lot 24407)			+/-	9.1664	µg/mL	Unstressed
	Purity 99%				+/-	13.2336	µg/mL	Stressed
10	Endosulfan I		202.0	µg/mL	+/-	1.1998	µg/mL	Gravimetric
	CAS # 959-98-8	(Lot BCBS8631)			+/-	9.2028	µg/mL	Unstressed
	Purity 99%				+/-	13.2862	µg/mL	Stressed
11	4,4'-DDE		200.8	µg/mL	+/-	1.1927	µg/mL	Gravimetric
	CAS # 72-55-9	(Lot GHYQG)			+/-	9.1481	µg/mL	Unstressed
	Purity 99%				+/-	13.2073	µg/mL	Stressed
12	Dieldrin		200.4	µg/mL	+/-	1.1903	µg/mL	Gravimetric
	CAS # 60-57-1	(Lot 8815700)			+/-	9.1299	µg/mL	Unstressed
	Purity 99%				+/-	13.1810	µg/mL	Stressed
13	Endrin		200.8	µg/mL	+/-	1.1927	µg/mL	Gravimetric
	CAS # 72-20-8	(Lot 8532900)			+/-	9.1481	µg/mL	Unstressed
	Purity 99%				+/-	13.2073	µg/mL	Stressed
14	4,4'-DDD		201.2	µg/mL	+/-	1.1951	µg/mL	Gravimetric
	CAS # 72-54-8	(Lot HAN02)			+/-	9.1664	µg/mL	Unstressed
	Purity 99%				+/-	13.2336	µg/mL	Stressed
15	Endosulfan II		200.0	µg/mL	+/-	1.1879	µg/mL	Gravimetric
	CAS # 33213-65-9	(Lot 8679900)			+/-	9.1117	µg/mL	Unstressed
	Purity 99%				+/-	13.1547	µg/mL	Stressed
16	4,4'-DDT		201.2	µg/mL	+/-	1.1951	µg/mL	Gravimetric
	CAS # 50-29-3	(Lot S37912V)			+/-	9.1664	µg/mL	Unstressed
	Purity 99%				+/-	13.2336	µg/mL	Stressed
17	Endrin aldehyde		200.8	µg/mL	+/-	1.1927	µg/mL	Gravimetric
	CAS # 7421-93-4	(Lot 30720)			+/-	9.1481	µg/mL	Unstressed
	Purity 99%				+/-	13.2073	µg/mL	Stressed
18	Endosulfan sulfate		202.0	µg/mL	+/-	1.1998	µg/mL	Gravimetric
	CAS # 1031-07-8	(Lot BCCB0424)			+/-	9.2028	µg/mL	Unstressed
	Purity 99%				+/-	13.2862	µg/mL	Stressed
19	Methoxychlor		200.4	µg/mL	+/-	1.1903	µg/mL	Gravimetric
	CAS # 72-43-5	(Lot 9013400)			+/-	9.1299	µg/mL	Unstressed
	Purity 99%				+/-	13.1810	µg/mL	Stressed
20	Endrin ketone		200.4	µg/mL	+/-	1.1903	µg/mL	Gravimetric
	CAS # 53494-70-5	(Lot 8618200)			+/-	9.1299	µg/mL	Unstressed
	Purity 99%				+/-	13.1810	µg/mL	Stressed

Solvent: Hexane/Toluene (50:50)
CAS # 110-54-3/108-88-3
Purity 99%

Column:
x .25mm x .2um
CLP II (cat.# 11323)

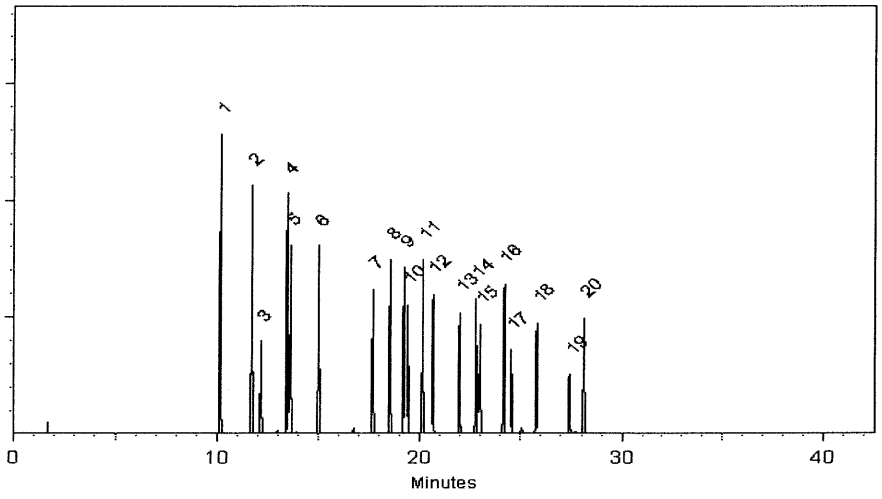
Carrier Gas:
helium-constant pressure 20 psi.

Temp. Program:
150°C to 300°C
@ 4°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
300°C

Det. Type:
ECD



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.

Walker Workman - Operations Technician I

Date Mixed: 29-Oct-2019 **Balance:** 1128353505

Fang-Yun Lo - QC Analyst

Date Passed: 05-Nov-2019

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:

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

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)	< 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.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.