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Prep Standard - Chemical Standard Summary

Order ID : O2213

Test : Pesticide-TCL

Prepbatch ID : PB153171,

Sequence ID/Qc Batch ID: pl060223,

Standard ID :
EP2338,EP2342,PP21328,PP21417,PP21704,PP21707,PP21708,PP21709,PP21710,PP21712,PP21713,PP21714,PP21715,PP21729,PP21730,PP21731,PP21732,PP21733,PP21734,PP21735,PP21736,PP21737,PP21739,PP21745,PP21747,PP21748,PP21749,PP21750,PP21751,PP21752,PP21773,PP22053,

Chemical ID :
E2865,E3412,E3453,E3466,E3469,E3477,E3502,E3503,E3512,P10279,P10787,P10791,P10886,P 11062,P11142,P11386,P11790,P11812,P11978,P8745,P9047,P9654,W2606,

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
230	1:1ACETONE/HEXANE	EP2338	05/11/2023	11/08/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 05/11/2023

FROM 8000.00000ml of E3502 + 8000.00000ml of E3503 = Final Quantity: 8000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2342	05/25/2023	10/23/2023	Rajesh Parikh	Extraction_SCALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 05/25/2023

FROM 4000.00000gram of E3412 = Final Quantity: 4000.000 gram

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
758	PEM Mix w/Surr	PP21328	01/04/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 01/05/2023

FROM 1.00000ml of P11790 + 99.00000ml of E3453 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
84	Pest/PCB Surrogate Stock 20 PPM	PP21417	01/16/2023	07/03/2023	Ankita Jodhani	None	None	Yogesh Patel 01/16/2023

FROM 1.00000ml of P10787 + 9.00000ml of E3453 = 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
383	1000/100 PPB Toxaphene STD (Restek)	PP21704	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.10000ml of P11386 + 99.40000ml of E3469 + 0.50000ml of PP21417 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
534	TOX 500 PPB STD	PP21707	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.50000ml of E3469 + 0.50000ml of PP21704 = 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
535	TOX 250 PPB STD	PP21708	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.75000ml of E3469 + 0.25000ml of PP21704 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
536	TOX 50 PPB STD	PP21709	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.90000ml of E3469 + 0.10000ml of PP21707 = 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
533	TOX 750 PPB STD	PP21710	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.25000ml of E3469 + 0.75000ml of PP21704 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3669	1000/100 PPB TOXAPHENE STD 2nd source (RESTEK)	PP21712	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.10000ml of P11812 + 99.40000ml of E3469 + 0.50000ml of PP21417 = 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
3670	TOX 500 PPB ICV std (RESTEK)	PP21713	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 02/24/2023

FROM 0.50000ml of E3469 + 0.50000ml of PP21712 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3746	1000/100 ppb Chlordane STD-RESTEK 2ND SOURCE	PP21714	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.10000ml of P8745 + 99.40000ml of E3469 + 0.50000ml of PP21417 = 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
532	CHLOR 500 PPB ICV STD	PP21715	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.50000ml of E3469 + 0.50000ml of PP21714 = 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)	PP21729	02/23/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.10000ml of P10279 + 99.40000ml of E3469 + 0.50000ml of PP21417 = 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
3629	20 PPM PEST stock Solution 1st source(RESTEK)	PP21730	02/24/2023	08/20/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 1.00000ml of P9654 + 9.00000ml of E3469 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1472	20 PPM Pest Stock Solution 2nd Source	PP21731	02/24/2023	08/20/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 1.00000ml of P11062 + 9.00000ml of E3469 = 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
1273	20 PPM Mirex Stock (Primary Source)	PP21732	02/24/2023	08/20/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.20000ml of P9047 + 9.80000ml of E3469 = 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)	PP21733	02/24/2023	08/20/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.20000ml of P11142 + 9.80000ml of E3469 = 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)	PP21734	02/24/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 98.50000ml of E3469 + 0.50000ml of PP21417 + 0.50000ml of PP21730 + 0.50000ml of PP21732 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
80	100/100 PPB Pesticide Working Solution 2nd Source	PP21735	02/24/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 98.50000ml of E3469 + 0.50000ml of PP21417 + 0.50000ml of PP21731 + 0.50000ml of PP21733 = 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
3632	50 PPB ICAL PEST STD(RESTEK)	PP21736	02/24/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.50000ml of E3469 + 0.50000ml of PP21734 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3988	50 PPB PEST ICV STD(RESTEK)	PP21737	02/24/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.50000ml of E3469 + 0.50000ml of PP21735 = 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
2714	1000 PPMV GASES Working STD	PP21739	02/27/2023	08/27/2023	Yogesh Patel	None	None	Ankita Jodhani 03/01/2023

FROM 36.00000ml of W2606 + 4.00000ml of P11978 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3631	75 PPB ICAL PEST STD(RESTEK)	PP21745	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.25000ml of E3469 + 0.75000ml of PP21734 = 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
3633	25 PPB ICAL PEST STD(RESTEK)	PP21747	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.75000ml of E3469 + 0.25000ml of PP21734 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3634	5 PPB ICAL PEST STD(RESTEK)	PP21748	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.90000ml of E3469 + 0.10000ml of PP21736 = 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
528	CHLOR 750 PPB STD	PP21749	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.25000ml of E3469 + 0.75000ml of PP21729 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
529	CHLOR 500 PPB STD	PP21750	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.50000ml of E3469 + 0.50000ml of PP21729 = 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	PP21751	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.75000ml of E3469 + 0.25000ml of PP21729 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3408	CHLOR 50 PPB STD	PP21752	02/27/2023	07/03/2023	Abdul Mirza	None	None	Ankita Jodhani 03/01/2023

FROM 0.90000ml of E3469 + 0.10000ml of PP21750 = 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
2156	100 PPB Pest Spike for LOD-LOQ (Restek)	PP21773	03/08/2023	08/20/2023	Abdul Mirza	None	None	Ankita Jodhani 03/09/2023

FROM 99.00000ml of E3477 + 0.50000ml of PP21731 + 0.50000ml of PP21733 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
465	200 PPB Pest/PCB Surrogate Spike	PP22053	05/19/2023	11/10/2023	Abdul Mirza	None	None	Ankita Jodhani 05/22/2023

FROM 1.00000ml of P10791 + 999.00000ml of E3502 = Final Quantity: 1000.000 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-3382-05 / Sand, Purified (cs/4x2.5kg)	0000243821	12/31/2024	04/30/2020 / RAJESH	04/28/2020 / RAJESH	E2865

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-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	22G0362002	07/03/2023	01/03/2023 / Rajesh	01/03/2023 / Rajesh	E3453

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
phenomenex	SI500025-30 / Cleanert SPE Silica, 5000 mg/25 ml	X0802-FS	08/10/2023	03/06/2023 / Rajesh	02/10/2022 / Rajesh	E3466

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)	22G0362001	08/20/2023	02/20/2023 / Rajesh	02/16/2023 / Rajesh	E3469

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	22L2862006	09/27/2023	02/28/2023 / Rajesh	02/23/2023 / Rajesh	E3477

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	22L2862006	12/16/2023	05/10/2023 / Rajesh	05/03/2023 / Rajesh	E3502

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)	23A2662017	11/08/2023	05/08/2023 / Rajesh	05/03/2023 / Rajesh	E3503

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)	23A2662017	11/30/2023	05/30/2023 / Rajesh	05/24/2023 / Rajesh	E3512

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,	A0162956	08/23/2023	02/23/2023 / Abdul	03/04/2021 / Abdul	P10279

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	A0172332	07/16/2023	01/16/2023 / Ankita	06/17/2021 / dhaval	P10787

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	A0172332	11/19/2023	05/19/2023 / Abdul	06/17/2021 / dhaval	P10791

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
ULTRA Scientific	CLP-242 / Pesticide Resolution Check Mixture	0006617274	07/18/2023	01/18/2023 / Ankita	07/13/2021 / Ankita	P10886

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
ULTRA Scientific	CLP-242 / Pesticide Resolution Check Mixture	0006617274	07/18/2023	01/18/2023 / Ankita	07/13/2021 / Ankita	P10886

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	A0168439	08/24/2023	02/24/2023 / Abdul	09/29/2021 / Abdul	P11062

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	79136 / Mirex, 1000 ug/ml	102821	08/24/2023	02/24/2023 / Abdul	10/29/2021 / Abdul	P11142

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32005 / Toxaphene Standard	A0176614	08/23/2023	02/23/2023 / Abdul	02/09/2022 / Ankita	P11386

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32074 / Pesticide Performance Evaluation Mix w/Surrogate	A0183168	07/04/2023	01/04/2023 / Abdul	05/27/2022 / Sohil	P11790

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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	32005 / Toxaphene Standard	A0177326	08/23/2023	02/23/2023 / Abdul	06/17/2022 / Ankita	P11812

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
AIR LIQUIDE	0702E400000PCL / 3 Gases Components Mix, 1000 PPM	160-402482954-1	07/15/2030	08/10/2022 / yogesh	07/29/2022 / Ankita	P11978

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	08/23/2023	02/23/2023 / Abdul	07/30/2019 / somina	P8745

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	79136 / Mirex, 1000 ug/ml	112018	08/24/2023	02/24/2023 / Abdul	11/01/2019 / Stephen	P9047

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	08/24/2023	02/24/2023 / Abdul	06/22/2020 / Sohil	P9654

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

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ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

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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.

DD
06/17/2021

Catalog No. : 32000 **Lot No.:** A0172332

Description : Pesticide Surrogate Mix

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

P10783
To
P10792
(10)

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

Expiration Date : August 31, 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	200.7 µg/mL	+/- 1.1840	µg/mL	Gravimetric
	CAS # 877-09-8 (Lot 0052481)		+/- 6.3622	µg/mL	Unstressed
	Purity 98%		+/- 8.3106	µg/mL	Stressed
2	Decachlorobiphenyl (BZ# 209)	200.2 µg/mL	+/- 1.1810	µg/mL	Gravimetric
	CAS # 2051-24-3 (Lot 30679)		+/- 6.3463	µg/mL	Unstressed
	Purity 99%		+/- 8.2897	µg/mL	Stressed

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

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

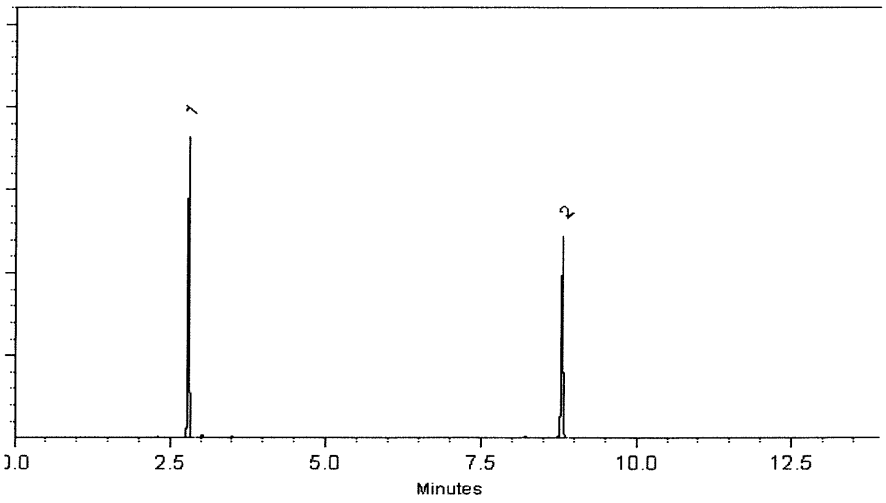
Carrier Gas:
helium-constant pressure 20 psi.

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.

Sam Moodler - Operations Tech I

Date Mixed: 12-May-2021 **Balance:** B707717271

Alexis Shelow - Operations Tech I

Date Passed: 14-May-2021

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

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Certificate of Analysis

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Certificate #3222.01

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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.

DD
06/17/2021

Catalog No. : 32000 **Lot No.:** A0172332

Description : Pesticide Surrogate Mix

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

P10783
To
P10792
(10)

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

Expiration Date : August 31, 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	200.7 µg/mL	+/- 1.1840	µg/mL	Gravimetric
	CAS # 877-09-8 (Lot 0052481)		+/- 6.3622	µg/mL	Unstressed
	Purity 98%		+/- 8.3106	µg/mL	Stressed
2	Decachlorobiphenyl (BZ# 209)	200.2 µg/mL	+/- 1.1810	µg/mL	Gravimetric
	CAS # 2051-24-3 (Lot 30679)		+/- 6.3463	µg/mL	Unstressed
	Purity 99%		+/- 8.2897	µg/mL	Stressed

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

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

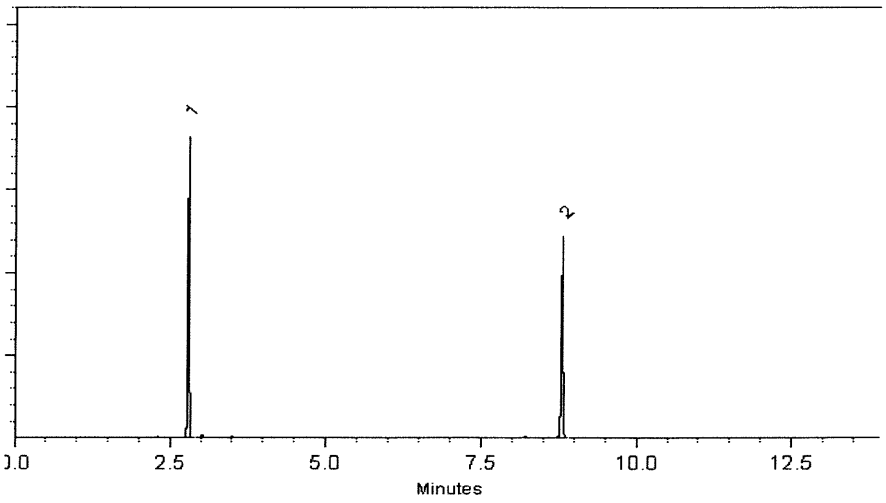
Carrier Gas:
helium-constant pressure 20 psi.

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.

Sam Moodler - Operations Tech I

Date Mixed: 12-May-2021 **Balance:** B707717271

Alexis Shelow - Operations Tech I

Date Passed: 14-May-2021

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

Sand
Purified
Washed and Ignited

avantor™ | J.T.Baker®

Material No.: 3382-05
Batch No.: 0000243821
Manufactured Date: 2018/04/09
Retest Date: 2025/04/07
Revision No: 1

Certificate of Analysis

Test	Specification	Result
Substances Soluble in HCl	<= 0.16 %	0.01

For Laboratory, Research or Manufacturing Use
Meets Reagent Specifications for testing USP/NF monographs

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

E 2865

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
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

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ALLAN CHEMICAL CORPORATION
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RINGWOOD, NEW JERSEY, 07456
(973) 962-6016 • INFO@ALLANCHEM.COM
WWW.ALLANCHEM.COM

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 :**	**Na_2SO_4**
SPECIFICATION NUMBER :	**6399**	**RELEASE DATE:**	**OCT/28/2021**
LOT NUMBER :	**139404**		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_4)	Min. 99.0%	99.8 %
pH of a 5% solution at 25ºC	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%	0.2 %
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.

RE-02-01, Ed. 3

E 3412

Recd. by RP on 10/13/22

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

avantor™ | J.T.Baker®

Material No.: 9262-03
Batch No.: 22G0362002
Manufactured Date: 2022-06-17
Expiration Date: 2023-09-16
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
ECD-Sensitive Impurities (as Ethylene Dibromide) – Single Impurity Peak (ng/mL)	≤ 5	2
Assay (Total Saturated C_6 Isomers) (by GC, corrected for water)	≥ 99.5 %	99.5 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	97 %
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 01/03/23

E 3453

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
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700


Cleanert Florisil
1g/6ml 30/pkg
LOT#:X0802-FS
MFG#:E02007
CAT# FS0006
Made in China
Agela Technologies
E3466

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

avantor™ | J.T.Baker®

Material No.: 9262-03
Batch No.: 22G0362002
Manufactured Date: 2022-06-17
Expiration Date: 2023-09-16
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
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	2
Assay (Total Saturated C_6 Isomers) (by GC, corrected for water)	≥ 99.5 %	99.5 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	97 %
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 2/16/23

E 3469

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
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Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker®

Material No.: 9254-03
Batch No.: 22L2862006
Manufactured Date: 2022-12-19
Expiration Date: 2025-12-18
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H_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	4

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 2/23/23

E 3477

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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Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker®

Material No.: 9254-03
Batch No.: 22L2862006
Manufactured Date: 2022-12-19
Expiration Date: 2025-12-18
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H_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	4

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 5/3/23

E 3502

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

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Material No.: 9262-03
Batch No.: 23A2662017
Manufactured Date: 2023-01-10
Expiration Date: 2024-04-10
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 %	97 %
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 5/3/23

E3503

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

avantor™ | J.T.Baker®

Material No.: 9262-03
Batch No.: 23A2662017
Manufactured Date: 2023-01-10
Expiration Date: 2024-04-10
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 %	97 %
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 5/24/23

E 3512

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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Certificate #3222.01

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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. : 32021 **Lot No.:** A0162956

Description : Chlordane Standard

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

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

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

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Chlordane	1,007.0 µg/mL	+/- 5.9813 µg/mL	Gravimetric
	CAS # 57-74-9 (Lot 142990)		+/- 31.9292 µg/mL	Unstressed
	Purity ----%		+/- 41.7029 µg/mL	Stressed

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

P10275
P10276
P10277
P10278
P10279
AR
03.05.2021

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

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

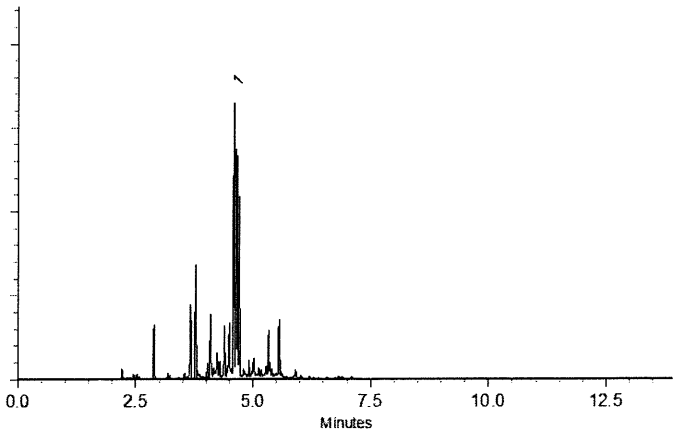
Carrier Gas:
helium-constant pressure 20 psi.

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.

Lane Kibe - Mix Technician

Date Mixed: 27-Jul-2020 **Balance:** 1127510105

Justine Albertson - Operations Tech-ARM QC

Date Passed: 29-Jul-2020

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

Agilent

Certificate of Analysis

Product Name: Pesticides Resolution Check Standard

Product Number: CLP-242-1 **Lot Issue Date:** 08-Jul-2021

Lot Number: 0006617274 **Expiration Date:** 31-Aug-2023

Description:
This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
trans-chlordane	005103-74-2	RM02726	10.0 ± 0.1 ng/mL
4,4'-DDE	000072-55-9	RM02892	20.1 ± 0.1 ng/mL
decachlorobiphenyl (BZ # 209)	002051-24-3	RM01256	20.1 ± 0.1 ng/mL
dieldrin	000060-57-1	RM16038	20.0 ± 0.1 ng/mL
endosulfan I	000959-98-8	RM15536	10.0 ± 0.1 ng/mL
endosulfan sulfate	001031-07-8	RM15389	20.0 ± 0.1 ng/mL
endrin ketone	053494-70-5	NT00720	20.0 ± 0.1 ng/mL
methoxychlor	000072-43-5	RM14186	100.1 ± 0.5 ng/mL
2,4,5,6-tetrachloro-m-xylene	000877-09-8	RM13844	20.1 ± 0.1 ng/mL

Matrix: hexane

Storage Conditions: Store at Room Temperature (15° to 30°C).

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

P 10883
↓
P 10902

AJ
07/13/21

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert
No. AT-1937

Certificate of Analysis

Product Number: CLP-242-1 **Lot Number:** 0006617274

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER
ISO 17034 Cert
No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
CSD-QA-015.1

ANAB ACCREDITED TESTING LABORATORY
ISO 17025 Cert
No. AT-1937

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
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.

P11061
↓
P11065
AR 9/30/2024

Catalog No. : 32291 **Lot No.:** A0168439

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 : January 31, 2025 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	alpha-BHC		200.5 µg/mL	+/- 1.4217 µg/mL	Gravimetric
	CAS # 319-84-6	(Lot 0012018BHC)		+/- 9.1674 µg/mL	Unstressed
	Purity 99%			+/- 13.2104 µg/mL	Stressed
2	gamma-BHC (Lindane)		200.8 µg/mL	+/- 1.4238 µg/mL	Gravimetric
	CAS # 58-89-9	(Lot 10972000)		+/- 9.1807 µg/mL	Unstressed
	Purity 97%			+/- 13.2295 µg/mL	Stressed
3	beta-BHC		200.0 µg/mL	+/- 1.4182 µg/mL	Gravimetric
	CAS # 319-85-7	(Lot SL210106)		+/- 9.1446 µg/mL	Unstressed
	Purity 99%			+/- 13.1774 µg/mL	Stressed
4	delta-BHC		199.9 µg/mL	+/- 1.4176 µg/mL	Gravimetric
	CAS # 319-86-8	(Lot ER02101401)		+/- 9.1409 µg/mL	Unstressed
	Purity 98%			+/- 13.1722 µg/mL	Stressed
5	Heptachlor		200.0 µg/mL	+/- 1.4182 µg/mL	Gravimetric
	CAS # 76-44-8	(Lot 0006540595)		+/- 9.1446 µg/mL	Unstressed
	Purity 99%			+/- 13.1774 µg/mL	Stressed
6	Aldrin		199.8 µg/mL	+/- 1.4169 µg/mL	Gravimetric
	CAS # 309-00-2	(Lot 11129800)		+/- 9.1363 µg/mL	Unstressed
	Purity 97%			+/- 13.1656 µg/mL	Stressed
7	Heptachlor epoxide (isomer B)		200.5 µg/mL	+/- 1.4217 µg/mL	Gravimetric
	CAS # 1024-57-3	(Lot 10039000)		+/- 9.1674 µg/mL	Unstressed
	Purity 99%			+/- 13.2104 µg/mL	Stressed

8	trans-Chlordane		200.5	µg/mL	+/-	1.4217	µg/mL	Gravimetric
	CAS # 5103-74-2	(Lot 32095)			+/-	9.1674	µg/mL	Unstressed
	Purity 99%				+/-	13.2104	µg/mL	Stressed
9	cis-Chlordane		200.0	µg/mL	+/-	1.4182	µg/mL	Gravimetric
	CAS # 5103-71-9	(Lot 31707)			+/-	9.1446	µg/mL	Unstressed
	Purity 99%				+/-	13.1774	µg/mL	Stressed
10	Endosulfan I		200.5	µg/mL	+/-	1.4217	µg/mL	Gravimetric
	CAS # 959-98-8	(Lot BCBS8631)			+/-	9.1674	µg/mL	Unstressed
	Purity 99%				+/-	13.2104	µg/mL	Stressed
11	4,4'-DDE		200.0	µg/mL	+/-	1.4182	µg/mL	Gravimetric
	CAS # 72-55-9	(Lot GHYQG)			+/-	9.1446	µg/mL	Unstressed
	Purity 99%				+/-	13.1774	µg/mL	Stressed
12	Dieldrin		200.4	µg/mL	+/-	1.4211	µg/mL	Gravimetric
	CAS # 60-57-1	(Lot 10714300)			+/-	9.1633	µg/mL	Unstressed
	Purity 98%				+/-	13.2045	µg/mL	Stressed
13	Endrin		199.9	µg/mL	+/-	1.4176	µg/mL	Gravimetric
	CAS # 72-20-8	(Lot 11129700)			+/-	9.1409	µg/mL	Unstressed
	Purity 98%				+/-	13.1722	µg/mL	Stressed
14	4,4'-DDD		200.5	µg/mL	+/-	1.4217	µg/mL	Gravimetric
	CAS # 72-54-8	(Lot HAN02)			+/-	9.1674	µg/mL	Unstressed
	Purity 99%				+/-	13.2104	µg/mL	Stressed
15	Endosulfan II		201.0	µg/mL	+/-	1.4253	µg/mL	Gravimetric
	CAS # 33213-65-9	(Lot 11129400)			+/-	9.1903	µg/mL	Unstressed
	Purity 99%				+/-	13.2433	µg/mL	Stressed
16	4,4'-DDT		200.0	µg/mL	+/-	1.4182	µg/mL	Gravimetric
	CAS # 50-29-3	(Lot S37912V)			+/-	9.1446	µg/mL	Unstressed
	Purity 99%				+/-	13.1774	µg/mL	Stressed
17	Endrin aldehyde		200.9	µg/mL	+/-	1.4245	µg/mL	Gravimetric
	CAS # 7421-93-4	(Lot 30455)			+/-	9.1857	µg/mL	Unstressed
	Purity 98%				+/-	13.2367	µg/mL	Stressed
18	Endosulfan sulfate		200.0	µg/mL	+/-	1.4182	µg/mL	Gravimetric
	CAS # 1031-07-8	(Lot BCCB0424)			+/-	9.1446	µg/mL	Unstressed
	Purity 99%				+/-	13.1774	µg/mL	Stressed
19	Methoxychlor		199.8	µg/mL	+/-	1.4169	µg/mL	Gravimetric
	CAS # 72-43-5	(Lot 10720900)			+/-	9.1363	µg/mL	Unstressed
	Purity 97%				+/-	13.1656	µg/mL	Stressed
20	Endrin ketone		199.8	µg/mL	+/-	1.4169	µg/mL	Gravimetric
	CAS # 53494-70-5	(Lot 11129600)			+/-	9.1363	µg/mL	Unstressed
	Purity 97%				+/-	13.1656	µg/mL	Stressed

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

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

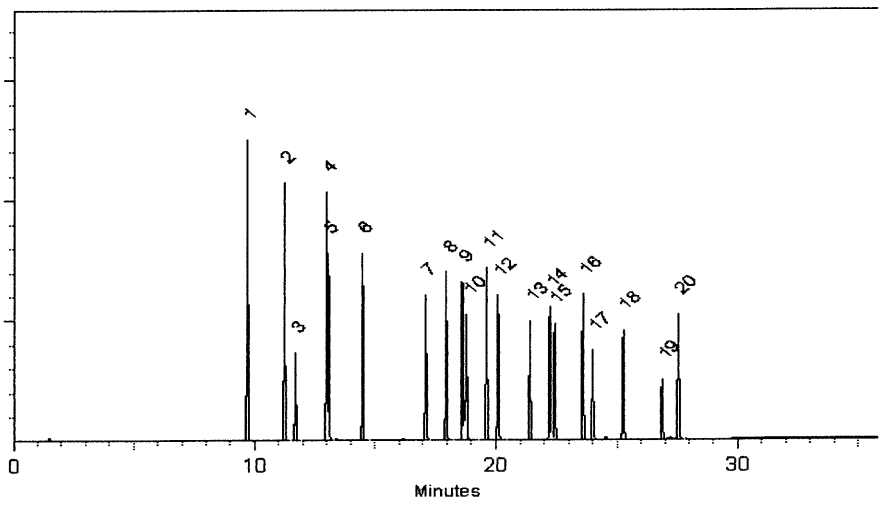
Carrier Gas:
helium-constant pressure 20 psi.

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.

Matt Fragassi - Mix Technician

Date Mixed: 25-Jan-2021 **Balance:** 1128342314

Marlina Cowan - Operations Tech I

Date Passed: 29-Jan-2021

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

P11061
↓
P11065

AR 9/30/2021

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) -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.

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 79136
Lot Number: 102821
Description: Mirex

Expiration Date: 102826
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

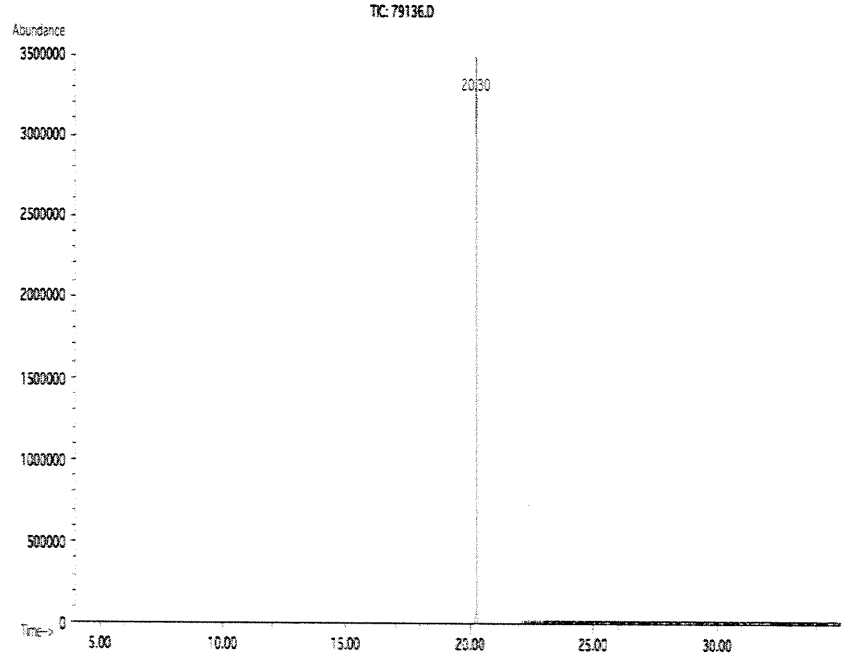
Solvent(s): **Lot#**
Acetone 81025

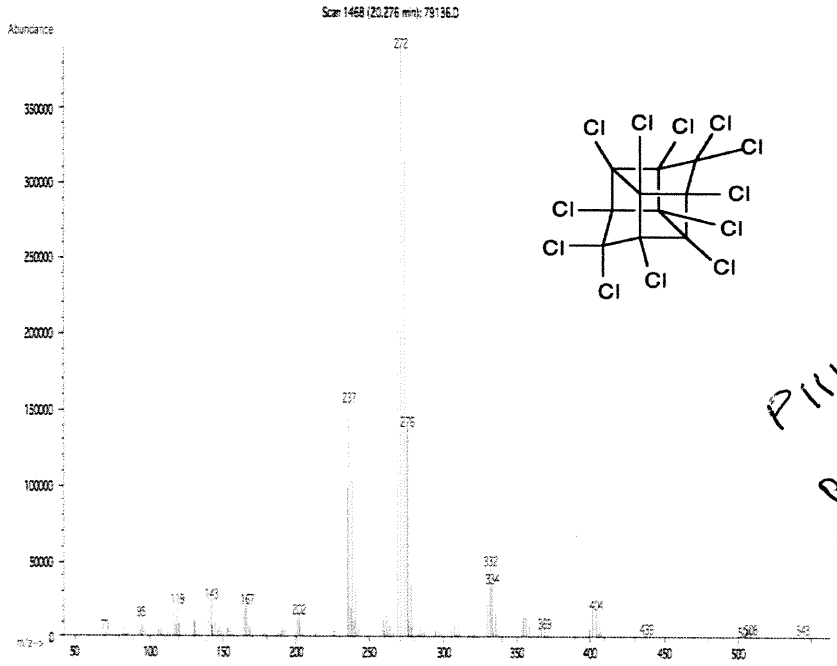
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 50.0 0.006 Flask Uncertainty

Eli Aliaga	102821
Formulated By: Eli Aliaga	DATE
Pedro Rentas	102821
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	0.05034	0.05039	1000.9	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.





P11142 To P11146
AR 11/02/21

- **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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Certificate #3222.01

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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.

P11364 AJ
J.
P11393 02/09/22

Catalog No. : 32005 **Lot No.:** A0176614

Description : Toxaphene Standard

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

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

Expiration Date : December 31, 2025 **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	1,005.3 µg/mL	+/- 5.9714	µg/mL	Gravimetric
	CAS # 8001-35-2 (Lot 1051817)		+/- 31.8763	µg/mL	Unstressed
	Purity ----%		+/- 41.6339	µg/mL	Stressed

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

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

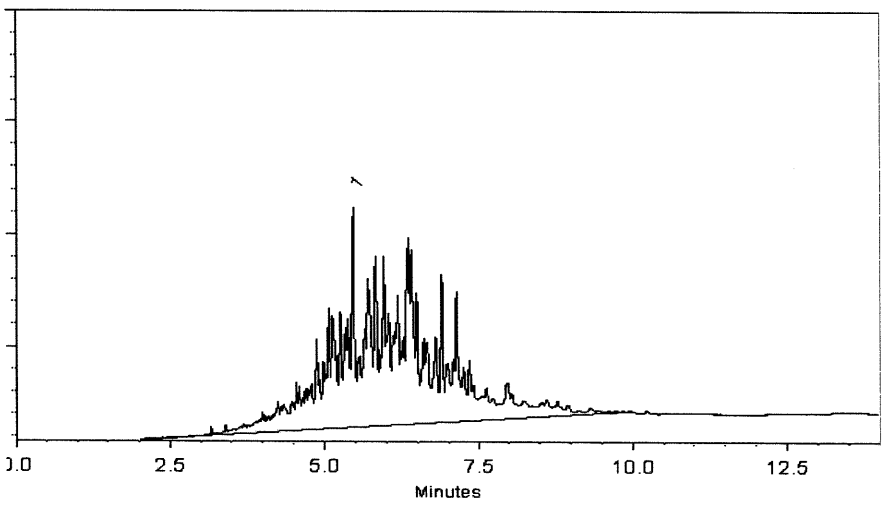
Carrier Gas:
helium-constant pressure 20 psi.

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.

Bradley Meyer
Bradley Meyer - Mix Technician

Date Mixed: 21-Sep-2021 **Balance:** 1128360905

Marlina Cowan
Marlina Cowan - Operations Tech I

Date Passed: 22-Sep-2021

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

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Certificate of Analysis

P11789 to P11793

Received by SJ 5/27/2022

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. : 32074 **Lot No.:** A0183168

Description : Pesticide Performance Eval Mix w/Surrogate

Performance Evaluation Std. 3/90 SOW w/surrogates 1-25µg/mL, Hexane, 1mL/ampul

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

Expiration Date : March 31, 2026 **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	2.0 µg/mL	+/- 0.1220	µg/mL	Gravimetric
	CAS # 877-09-8 (Lot 0052481)		+/- 0.1523	µg/mL	Unstressed
	Purity 98%		+/- 0.1799	µg/mL	Stressed
2	alpha-BHC	1.0 µg/mL	+/- 0.0610	µg/mL	Gravimetric
	CAS # 319-84-6 (Lot 12469000)		+/- 0.0762	µg/mL	Unstressed
	Purity 99%		+/- 0.0900	µg/mL	Stressed
3	gamma-BHC (Lindane)	1.0 µg/mL	+/- 0.0610	µg/mL	Gravimetric
	CAS # 58-89-9 (Lot 12642100)		+/- 0.0762	µg/mL	Unstressed
	Purity 99%		+/- 0.0900	µg/mL	Stressed
4	beta-BHC	1.0 µg/mL	+/- 0.0610	µg/mL	Gravimetric
	CAS # 319-85-7 (Lot BCCC6425)		+/- 0.0762	µg/mL	Unstressed
	Purity 99%		+/- 0.0900	µg/mL	Stressed
5	Endrin	5.1 µg/mL	+/- 0.3045	µg/mL	Gravimetric
	CAS # 72-20-8 (Lot 13000500)		+/- 0.3805	µg/mL	Unstressed
	Purity 99%		+/- 0.4496	µg/mL	Stressed
6	4,4'-DDT	10.1 µg/mL	+/- 0.6090	µg/mL	Gravimetric
	CAS # 50-29-3 (Lot 210916JLM)		+/- 0.7609	µg/mL	Unstressed
	Purity 99%		+/- 0.8992	µg/mL	Stressed
7	Methoxychlor	25.2 µg/mL	+/- 1.5221	µg/mL	Gravimetric
	CAS # 72-43-5 (Lot 12555700)		+/- 1.9018	µg/mL	Unstressed
	Purity 98%		+/- 2.2475	µg/mL	Stressed

8	Decachlorobiphenyl (BZ# 209)		2.0	µg/mL	+/-	0.1221	µg/mL	Gravimetric
	CAS # 2051-24-3	(Lot 30679)			+/-	0.1524	µg/mL	Unstressed
	Purity 99%				+/-	0.1800	µg/mL	Stressed

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

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

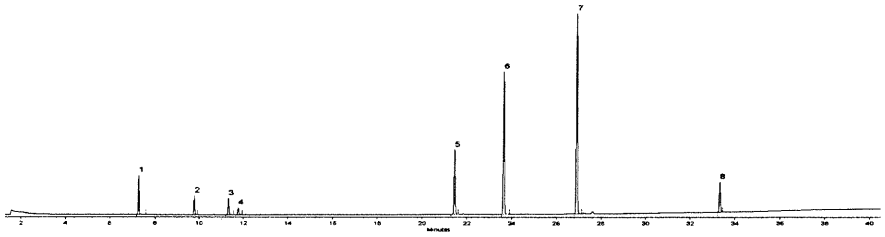
Carrier Gas:
helium-constant pressure 20 psi.

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.

Brittany Federinko - Operations Tech I

Date Mixed: 22-Mar-2022 **Balance:** 1128360905

John Lidgett - AD Chemist

Date Passed: 24-Mar-2022

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) -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.

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Certificate of Analysis

P11794 to P11798

Received by SJ 5/27/2022

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. : 32074 **Lot No.:** A0183168

Description : Pesticide Performance Eval Mix w/Surrogate

Performance Evaluation Std. 3/90 SOW w/surrogates 1-25µg/mL, Hexane, 1mL/ampul

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

Expiration Date : March 31, 2026 **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	2.0 µg/mL	+/- 0.1220 µg/mL	Gravimetric
	CAS # 877-09-8 (Lot 0052481)		+/- 0.1523 µg/mL	Unstressed
	Purity 98%		+/- 0.1799 µg/mL	Stressed
2	alpha-BHC	1.0 µg/mL	+/- 0.0610 µg/mL	Gravimetric
	CAS # 319-84-6 (Lot 12469000)		+/- 0.0762 µg/mL	Unstressed
	Purity 99%		+/- 0.0900 µg/mL	Stressed
3	gamma-BHC (Lindane)	1.0 µg/mL	+/- 0.0610 µg/mL	Gravimetric
	CAS # 58-89-9 (Lot 12642100)		+/- 0.0762 µg/mL	Unstressed
	Purity 99%		+/- 0.0900 µg/mL	Stressed
4	beta-BHC	1.0 µg/mL	+/- 0.0610 µg/mL	Gravimetric
	CAS # 319-85-7 (Lot BCCC6425)		+/- 0.0762 µg/mL	Unstressed
	Purity 99%		+/- 0.0900 µg/mL	Stressed
5	Endrin	5.1 µg/mL	+/- 0.3045 µg/mL	Gravimetric
	CAS # 72-20-8 (Lot 13000500)		+/- 0.3805 µg/mL	Unstressed
	Purity 99%		+/- 0.4496 µg/mL	Stressed
6	4,4'-DDT	10.1 µg/mL	+/- 0.6090 µg/mL	Gravimetric
	CAS # 50-29-3 (Lot 210916JLM)		+/- 0.7609 µg/mL	Unstressed
	Purity 99%		+/- 0.8992 µg/mL	Stressed
7	Methoxychlor	25.2 µg/mL	+/- 1.5221 µg/mL	Gravimetric
	CAS # 72-43-5 (Lot 12555700)		+/- 1.9018 µg/mL	Unstressed
	Purity 98%		+/- 2.2475 µg/mL	Stressed

8	Decachlorobiphenyl (BZ# 209)		2.0	µg/mL	+/-	0.1221	µg/mL	Gravimetric
	CAS # 2051-24-3	(Lot 30679)			+/-	0.1524	µg/mL	Unstressed
	Purity 99%				+/-	0.1800	µg/mL	Stressed

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

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

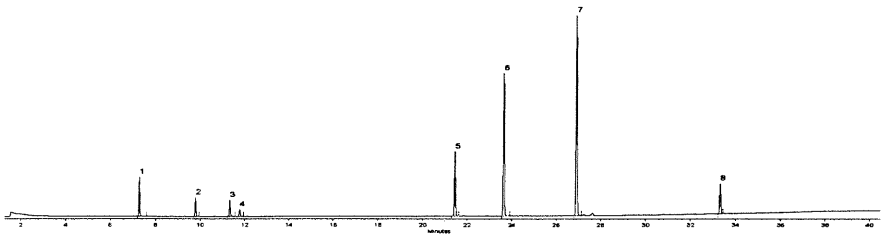
Carrier Gas:
helium-constant pressure 20 psi.

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.

Brittany Federinko - Operations Tech I

Date Mixed: 22-Mar-2022 **Balance:** 1128360905

John Lidgett - AD Chemist

Date Passed: 24-Mar-2022

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) -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.

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
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.

P11811 ↓ P11819 AJ 06/17/22

Catalog No. : 32005 **Lot No.:** A0177326

Description : Toxaphene Standard

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

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

Expiration Date : January 31, 2026 **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 1051817)		+/- 31.8552	µg/mL	Unstressed
	Purity -----%		+/- 41.6063	µg/mL	Stressed

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

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

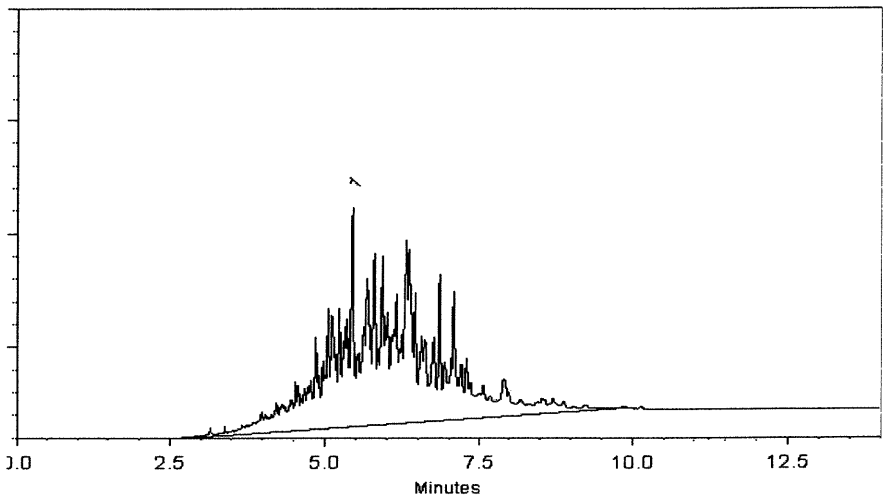
Carrier Gas:
helium-constant pressure 20 psi.

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.

Sam Moodler - Operations Tech I

Date Mixed: 11-Oct-2021 **Balance:** B442140311

Marlina Cowan - Operations Tech I

Date Passed: 14-Oct-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:

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

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) -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.

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA LLC
6141 Easton Road
Plumsteadville, PA 18949
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: CERTIFIED STANDARD-SPEC

Part Number:	X04NI99C33A00P7	Reference Number:	160-402482954-1
Cylinder Number:	CLM007359	Cylinder Volume:	32.0 CF
Laboratory:	124 - Plumsteadville - PA	Cylinder Pressure:	2217 PSIG
Analysis Date:	Jul 15, 2022	Valve Outlet:	350
Lot Number:	160-402482954-1		

Expiration Date: Jul 15, 2030

Product composition verified by direct comparison to calibration standards traceable to N.I.S.T. weights and/or N.I.S.T. Gas Mixture reference materials.

ANALYTICAL RESULTS

Component	Req Conc	Actual Concentration (Mole %)	Analytical Uncertainty
ETHANE	1000 PPM	1021 PPM	+/-2%
ETHYLENE	1000 PPM	1000 PPM	+/-2%
METHANE	1000 PPM	1000 PPM	+/-2%
NITROGEN	Balance		

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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. : 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

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%

P8742
↓
P8746

SM
7/30/19

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

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

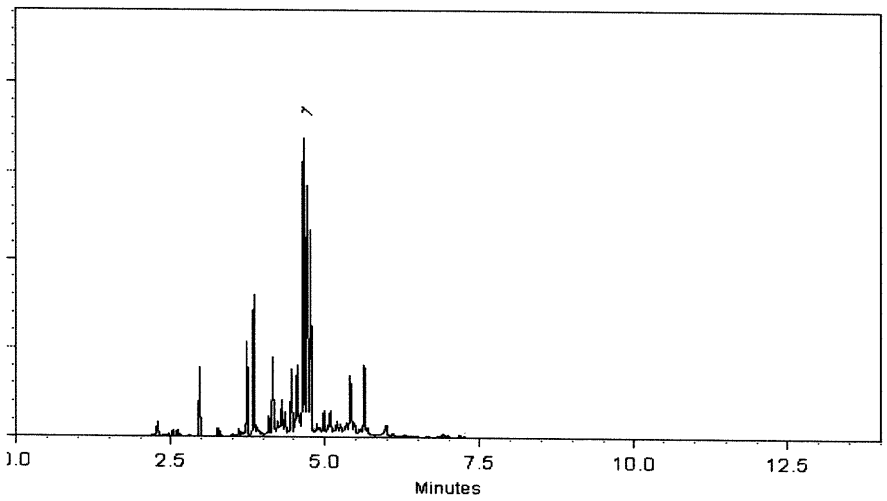
Carrier Gas:
helium-constant pressure 20 psi.

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 J 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

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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.

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)

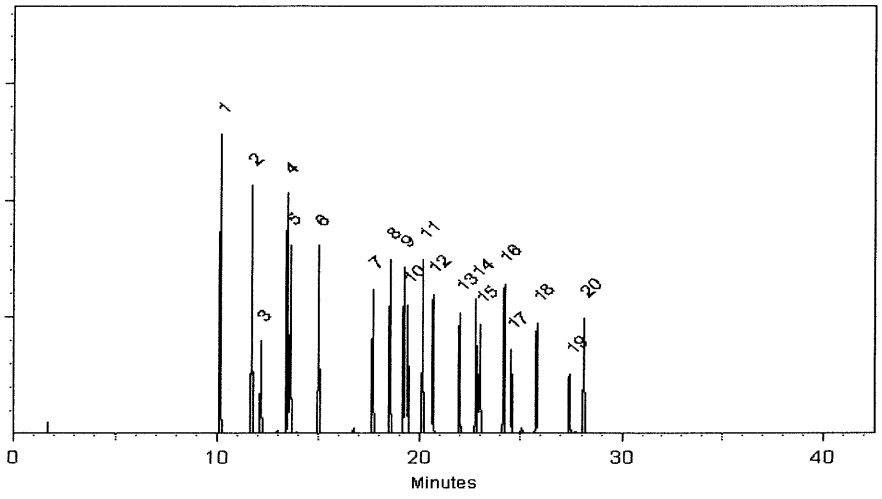
Carrier Gas:
helium-constant pressure 20 psi.

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.

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www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 72072
Lot Number: 112018
Description: n-Tetracosane-d50

Expiration Date: 112028
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 2684186
Weight(s) shown below were combined and diluted to (mL): 200.0

Solvent(s): **Lot#**
Methylene chloride 102669

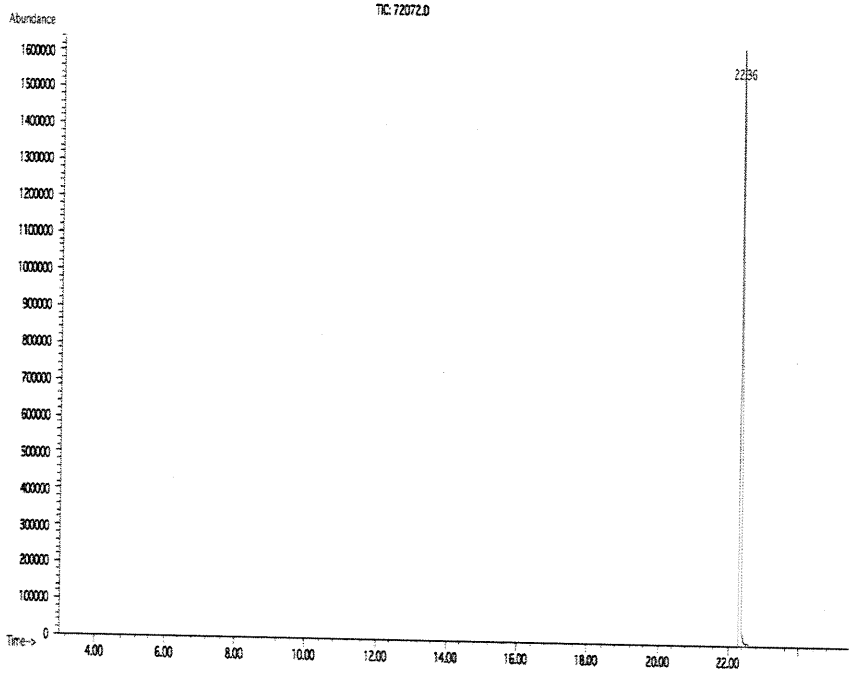
Received by SG on 11/1/19
P9044 - P9053

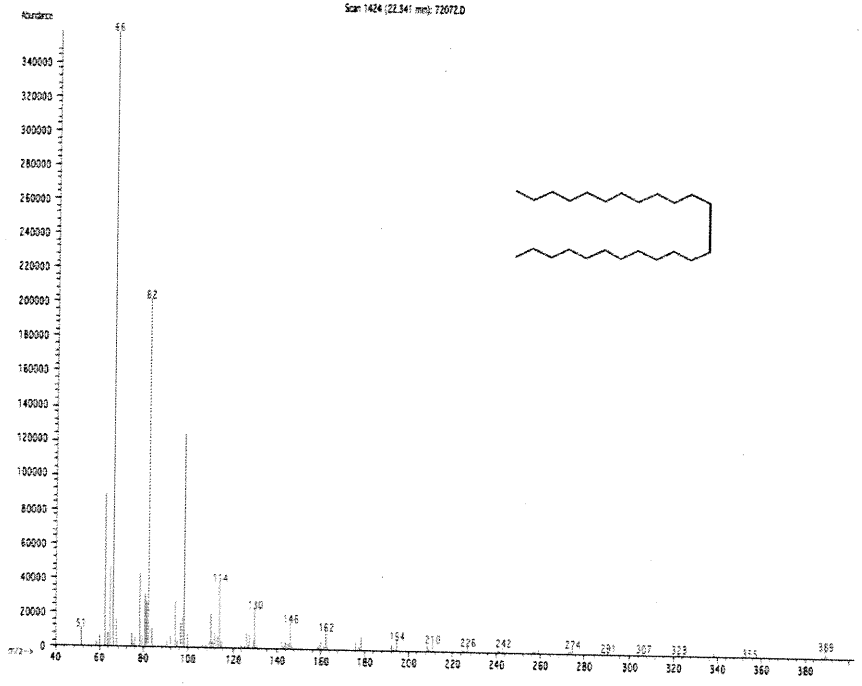
5E-05 Balance Uncertainty
0.058 Flask Uncertainty

Formulated By:	Prashant Chauhan	112018 DATE
Reviewed By:	Pedro Rentas	112018 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. n-Tetracosane-d50	2072	PR-17753/09216TC1	1000	98	0.2	0.20411	0.20415	1000.2	4.2	16416-32-3	N/A	N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.





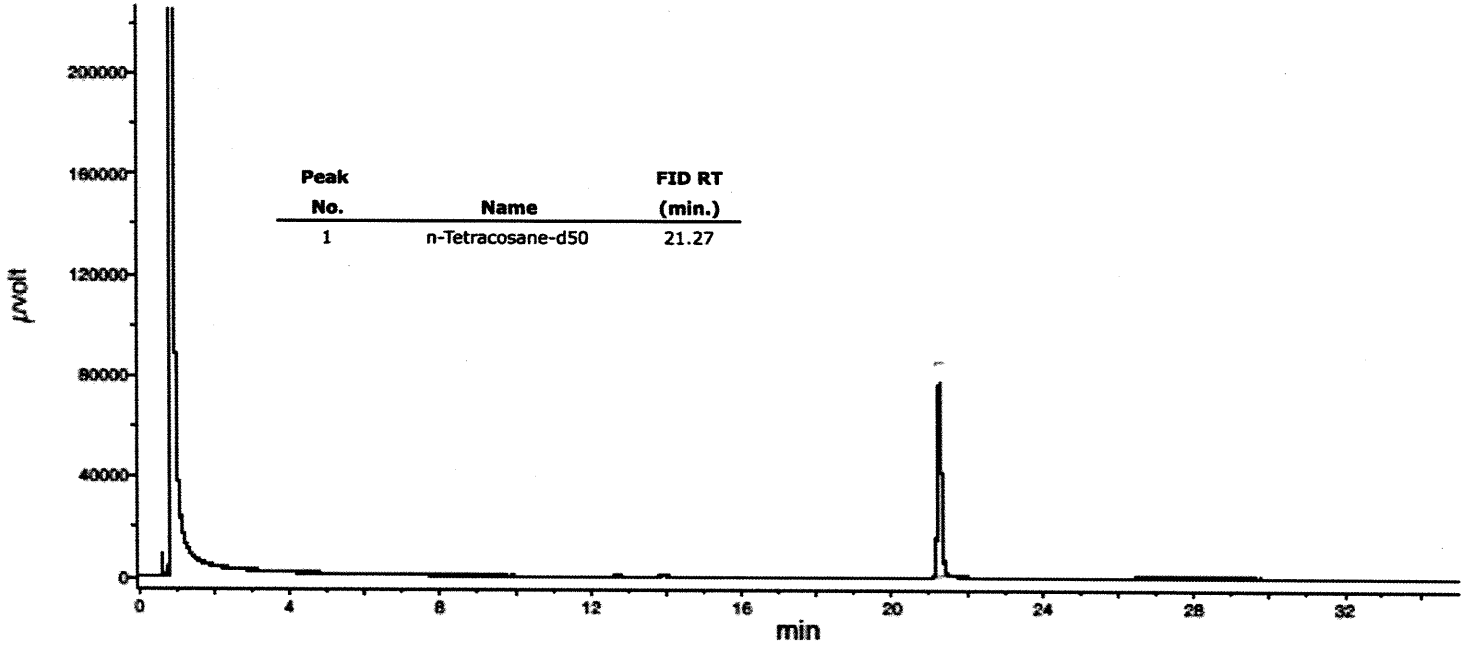
- **The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.**
- **Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).**
- **Standards are certifed (+/-) 0.5% of the stated 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).**

Run 40, "P72072 L112018 [1000µg/mL in MeCl2]"

Run Length: 35.00 min, 20999 points at 10 points/second.
Created: Thu, Nov 22, 2018 at 7:23:18 AM.
Sampled: Sequence "112018-GC4M1", Method "GC4-M1".
Analyzed using Method "GC4-M1".

Comments

GC4-M1 Analysis by Melissa Stonier
Column ID SPB5 L#60062-01A : 30 meter x 0.53mm x 1.5um Film Thickness
Flow rates; Total Flow = 300 ml/min, Helium (carrier) = 6.5 mL, Helium (make-up) = 25 mL, Hydrogen (detector) = 30 mL, Air (detector) =360 mL
Oven Temp 1 = 50°C (1 min), Rate = 10°C/min, Oven Temp 2 = 300°C (9 min), Total Run Time = 35 Minutes.
Injector Temp = 200°C, FID Temp = 300°C, FID Signal = eDaq Channel 1.
Gas Chromatograph = HP 5890, Auto Sampler = HP 7673, Standard Injection = 0.5 uL, Range = 3



Peak No.	Name	FID RT (min.)
1	n-Tetracosane-d50	21.27