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Prep Standard - Chemical Standard Summary

Order ID : O1232

Test : Pesticide-TCL

Prepbatch ID : PB150373,

Sequence ID/Qc Batch ID: pl012023,pl012323,

Standard ID :
EP2279,EP2294,PP20663,PP20664,PP20666,PP20667,PP20668,PP20674,PP20675,PP20676,PP20677,PP20678,PP20679,PP20680,PP20681,PP20682,PP20683,PP20684,PP20685,PP20686,PP20687,PP20688,PP20689,PP20714,PP20715,PP20716,PP20717,PP20718,PP21237,PP21328,PP21357,

Chemical ID :
E2865,E3390,E3393,E3403,E3412,E3435,E3436,E3453,E3455,E3456,P10278,P10581,P10711,P10786,P10886,P11061,P11790,P11811,P8733,P8742,P9648,P9653,W2938,W2939,

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

FROM 4000.00000gram of E3412 = Final Quantity: 4000.000 gram

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
230	1:1ACETONE/HEXANE	EP2294	01/17/2023	07/16/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 01/17/2023

FROM 8000.00000ml of E3455 + 8000.00000ml of E3456 = Final Quantity: 16000.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
84	Pest/PCB Surrogate Stock 20 PPM	PP20663	09/01/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 1.00000ml of P10581 + 9.00000ml of E3390 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3629	20 PPM PEST stock Solution 1st source(RESTEK)	PP20664	09/01/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 1.00000ml of P9653 + 9.00000ml of E3390 = 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)	PP20666	09/01/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 1.00000ml of P8733 + 9.00000ml of E3390 = 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)	PP20667	09/01/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 1.00000ml of P9648 + 9.00000ml of E3390 = 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)	PP20668	09/01/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 98.50000ml of E3390 + 0.50000ml of PP20663 + 0.50000ml of PP20664 + 0.50000ml of PP20666 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
386	1000/100 PPB Chlordane STD (Restek)	PP20674	09/01/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.10000ml of P8742 + 99.40000ml of E3393 + 0.50000ml of PP20663 = 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
3746	1000/100 ppb Chlordane STD-RESTEK 2ND SOURCE	PP20675	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.10000ml of P10278 + 0.50000ml of P8742 + 99.40000ml of W2939 = 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)	PP20676	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.25000ml of W2938 + 0.75000ml of PP20668 = 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)	PP20677	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.50000ml of W2938 + 0.50000ml of PP20668 = 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)	PP20678	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.75000ml of W2938 + 0.25000ml of PP20668 = 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
3634	5 PPB ICAL PEST STD(RESTEK)	PP20679	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.90000ml of W2938 + 0.10000ml of PP20677 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
528	CHLOR 750 PPB STD	PP20680	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.25000ml of W2938 + 0.75000ml of PP20674 = 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
529	CHLOR 500 PPB STD	PP20681	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.50000ml of W2938 + 0.50000ml of PP20674 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
530	CHLOR 250 PPB STD	PP20682	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.75000ml of W2938 + 0.25000ml of PP20674 = 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
3408	CHLOR 50 PPB STD	PP20683	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.90000ml of W2938 + 0.10000ml of PP20681 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
383	1000/100 PPB Toxaphene STD (Restek)	PP20684	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.10000ml of P10711 + 99.40000ml of W2938 + 0.50000ml of PP20663 = 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
3669	1000/100 PPB TOXAPHENE STD 2nd source (RESTEK)	PP20685	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.10000ml of P11811 + 99.40000ml of W2939 + 0.50000ml of PP20663 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
533	TOX 750 PPB STD	PP20686	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.25000ml of W2939 + 0.75000ml of PP20684 = 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	PP20687	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.50000ml of W2939 + 0.50000ml of PP20684 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
535	TOX 250 PPB STD	PP20688	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.75000ml of W2939 + 0.25000ml of PP20684 = 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	PP20689	09/01/2022	02/23/2023	Abdul Mirza	None	None	Ankita Jodhani 09/09/2022

FROM 0.90000ml of W2939 + 0.10000ml of PP20684 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1472	20 PPM Pest Stock Solution 2nd Source	PP20714	09/07/2022	03/07/2023	Ankita Jodhani	None	None	Yogesh Patel 09/09/2022

FROM 1.00000ml of P11061 + 9.00000ml of E3393 = 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
80	100/100 PPB Pesticide Working Solution 2nd Source	PP20715	09/07/2022	03/01/2023	Ankita Jodhani	None	None	Yogesh Patel 09/09/2022

FROM 98.50000ml of E3393 + 0.50000ml of PP20663 + 0.50000ml of PP20667 + 0.50000ml of PP20714 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3988	50 PPB PEST ICV STD(RESTEK)	PP20716	09/07/2022	03/01/2023	Ankita Jodhani	None	None	Yogesh Patel 09/09/2022

FROM 0.50000ml of E3393 + 0.50000ml of PP20715 = 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
532	CHLOR 500 PPB ICV STD	PP20717	09/07/2022	02/23/2023	Ankita Jodhani	None	None	Yogesh Patel 09/09/2022

FROM 0.50000ml of E3393 + 0.50000ml of PP20675 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3670	TOX 500 PPB ICV std (RESTEK)	PP20718	09/07/2022	02/23/2023	Ankita Jodhani	None	None	Yogesh Patel 09/09/2022

FROM 0.50000ml of E3393 + 0.50000ml of PP20685 = 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
79	500 PPB Pesticide Spike Solution	PP21237	12/06/2022	03/01/2023	Abdul Mirza	None	None	Ankita Jodhani 12/07/2022

FROM 95.00000ml of E3435 + 2.50000ml of PP20667 + 2.50000ml of PP20714 = Final Quantity: 100.000 ml

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

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
465	200 PPB Pest/PCB Surrogate Spike	PP21357	01/10/2023	06/08/2023	Abdul Mirza	None	None	Ankita Jodhani 01/12/2023

FROM 1.00000ml of P10786 + 999.00000ml of E3436 = 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 #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	21L2662004	03/01/2023	09/01/2022 / Rajesh	08/24/2022 / Rajesh	E3390

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)	21L2662004	03/07/2023	09/07/2022 / Rajesh	08/31/2022 / Rajesh	E3393

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
phenomenex	FS0006 / Cleanert SPE Silica, 1000 mg/6ml, 30PK	X0607-FS	03/23/2023	10/28/2022 / Sohil	09/23/2022 / Rajesh	E3403

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	139404	10/23/2023	10/18/2022 / Rajesh	10/13/2022 / Rajesh	E3412

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	22D1162003	06/05/2023	12/05/2022 / Rajesh	12/05/2022 / Rajesh	E3435

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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)	22E1562001	06/08/2023	12/08/2022 / Rajesh	12/05/2022 / Rajesh	E3436

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 #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	22G0362002	07/16/2023	01/16/2023 / Rajesh	01/11/2023 / Rajesh	E3455

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	9005-05 / Acetone Ultra (cs/4x4L)	22J0461011	07/17/2023	01/17/2023 / Rajesh	01/11/2023 / Rajesh	E3456

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	03/01/2023	09/01/2022 / Abdul	03/04/2021 / Abdul	P10278

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	A0171211	03/01/2023	09/01/2022 / Abdul	05/24/2021 / Abdul	P10581

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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	A0169056	03/01/2023	09/01/2022 / Abdul	06/17/2021 / dhaval	P10711

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	07/10/2023	01/10/2023 / Abdul	06/17/2021 / dhaval	P10786

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	03/07/2023	09/07/2022 / Ankita	09/29/2021 / Abdul	P11061

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	03/01/2023	09/01/2022 / Abdul	06/17/2022 / Ankita	P11811

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	79136 / Mirex, 1000 ug/ml	030818	03/01/2023	09/01/2022 / Abdul	07/30/2019 / Ankita	P8733

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	03/01/2023	09/01/2022 / Abdul	07/30/2019 / somina	P8742

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	03/01/2023	09/01/2022 / Abdul	06/19/2020 / Sohil	P9648

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	03/01/2023	09/01/2022 / Abdul	06/22/2020 / Sohil	P9653

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)	2280762004	02/23/2023	07/25/2022 / JIGNESH	07/25/2022 / JIGNESH	W2938

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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)	2280762004	02/23/2023	07/25/2022 / JIGNESH	07/25/2022 / JIGNESH	W2939

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DP
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)

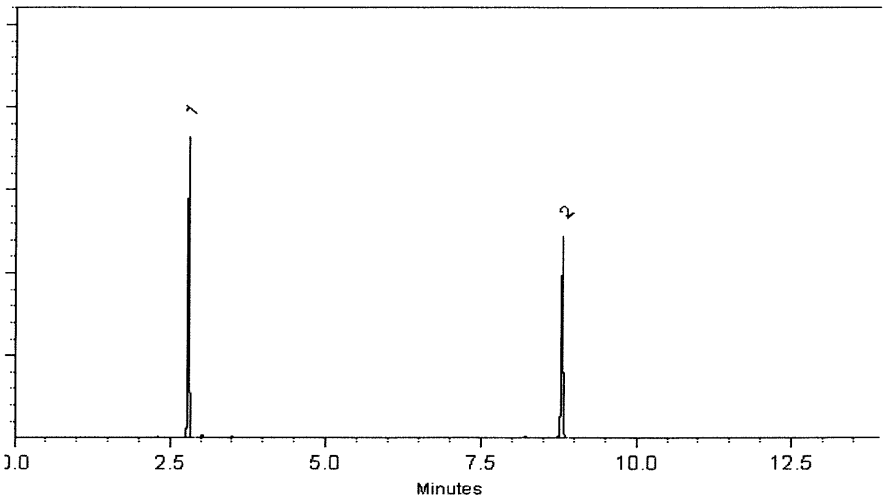
Carrier Gas:
helium-constant pressure 20 psi.

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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CERTIFIED REFERENCE MATERIAL

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

P10708
To - (5)
P10712

Catalog No. : 32005 **Lot No.:** A0169056

Description : Toxaphene Standard

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

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

Expiration Date : May 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	1,000.0 µg/mL	+/- 5.9397	µg/mL	Gravimetric
	CAS # 8001-35-2 (Lot 1051817)		+/- 31.7072	µg/mL	Unstressed
	Purity ----%		+/- 41.4130	µg/mL	Stressed

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

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

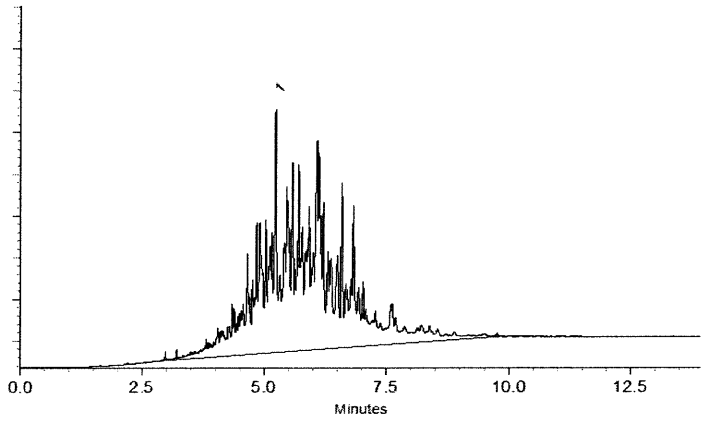
Carrier Gas:
helium-constant pressure 20 psi.

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: 14-Feb-2021 **Balance:** B707717271

Justine Albertson - Operations Tech-ARM QC

Date Passed: 18-Feb-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

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

avantor™ | J.T.Baker®

Material No.: 9262-03
Batch No.: 21L2662004
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	2
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	10
Residue after Evaporation	≤ 1.0 ppm	0.2 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

Rcd. by RP on 8/24/22

E3390

James T Ethier
Jamie Ethier
Vice President Global Quality

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

avantor™ | J.T.Baker®

Material No.: 9262-03
Batch No.: 21L2662004
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	2
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	10
Residue after Evaporation	≤ 1.0 ppm	0.2 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 8/31/22

E3393

James T Ethier
Jamie Ethier
Vice President Global Quality

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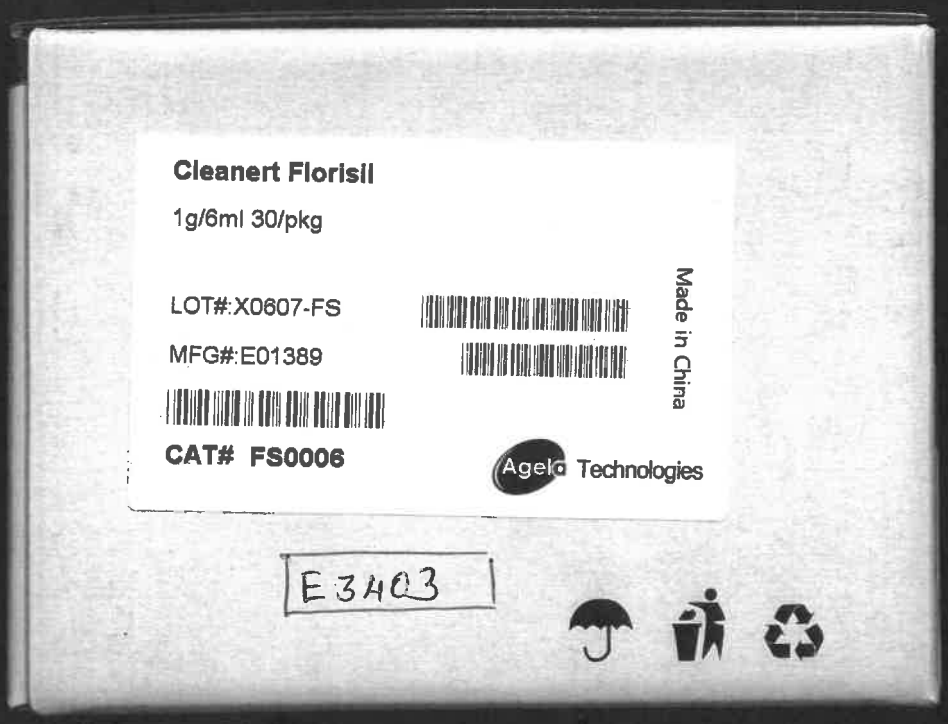
Cleanert Florisil
1g/6ml 30/pkg
LOT#:X0607-FS
MFG#:E01389
CAT# FS0006
Made in China
Agela Technologies
E3403

PRODUCTOS QUIMICOS MONTERREY, S.A. DE C.V.

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RINGWOOD, NEW JERSEY, 07456
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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

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker®

Material No.: 9254-03
Batch No.: 22D1162003
Manufactured Date: 2022-03-20
Expiration Date: 2025-03-19
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.4 %	99.8 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	< 1.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H_2O)	≤ 0.5 %	0.2 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	< 1

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

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

Recd by RP on 12/5/22

E 3435

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

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker®

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

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.4 %	99.8 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	< 1.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H_2O)	≤ 0.5 %	0.1 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

Recd. by RP on 12/5/22

E3436

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.: 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
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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 RJ on 1/11/23

E 3455

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
CMOS

avantor™ | J.T.Baker®

Material No.: 9005-05
Batch No.: 22J0461011
Manufactured Date: 2022-09-29
Retest Date: 2027-09-28
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.5 %	99.8 %
Color (APHA)	≤ 10	< 5
Residue after Evaporation	≤ 5 ppm	< 1 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.5	0.1
Water (H_2O)	≤ 0.5 %	0.2 %
Solubility in H_2O	Passes Test	Passes Test
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Phosphate (PO_4)	≤ 0.05 ppm	< 0.05 ppm
Trace Impurities – Aluminum (Al)	≤ 50.0 ppb	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 5.0 ppb	< 5.0 ppb
Trace Impurities – Barium (Ba)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Beryllium (Be)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Bismuth (Bi)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities – Cadmium (Cd)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Calcium (Ca)	≤ 25.0 ppb	4.9 ppb
Trace Impurities – Chromium (Cr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Trace Impurities – Iron (Fe)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb

Recd. by RJ on 01/11/23

E 3456

>>> Continued on page 2 >>>

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
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Material No.: 9005-05
Batch No.: 22J0461011

Test	Specification	Result
Trace Impurities - Molybdenum (Mo)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Nickel (Ni)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Niobium (Nb)	≤ 50.0 ppb	< 1.0 ppb
Trace Impurities - Potassium (K)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities - Silicon (Si)	≤ 50 ppb	< 10 ppb
Trace Impurities - Silver (Ag)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Sodium (Na)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Strontium (Sr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Tantalum (Ta)	≤ 50.0 ppb	< 5.0 ppb
Trace Impurities - Thallium (Tl)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Tin (Sn)	≤ 20.0 ppb	< 10.0 ppb
Trace Impurities - Titanium (Ti)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Vanadium (V)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities - Zinc (Zn)	≤ 20.0 ppb	1.8 ppb
Trace Impurities - Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count - 0.5 µm and greater (Rion KS42AF)	≤ 100 par/ml	4 par/ml
Particle Count - 1.0 µm and greater (Rion KS42AF)	≤ 8 par/ml	2 par/ml

>>> Continued on page 3 >>>

Acetone
CMOS

avantor™ | J.T.Baker®

Material No.: 9005-05
Batch No.: 22J0461011

Test	Specification	Result

For Microelectronic Use

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

James T Ethier

Jamie Ethier
Vice President Global Quality

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Bellefonte, PA 16823-8812
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CERTIFIED REFERENCE MATERIAL

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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.

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)

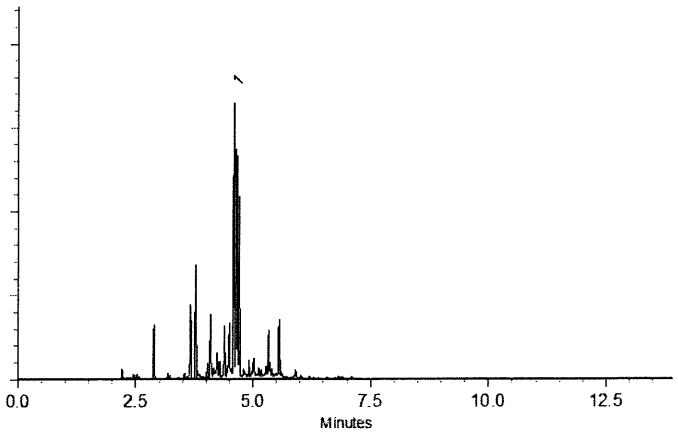
Carrier Gas:
helium-constant pressure 20 psi.

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

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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.:** A0171211

Description : Pesticide Surrogate Mix

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

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

Expiration Date : July 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 **CAS #** 877-09-8 (Lot 0052481) **Purity** 98%	199.9 µg/mL	+/- 1.1875 +/- 6.3389 +/- 8.2793	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Decachlorobiphenyl (BZ# 209) **CAS #** 2051-24-3 (Lot ER071509-01) **Purity** 99%	200.0 µg/mL	+/- 1.1879 +/- 6.3414 +/- 8.2826	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

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

P10573 & P10582

AR 05/25/2021

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

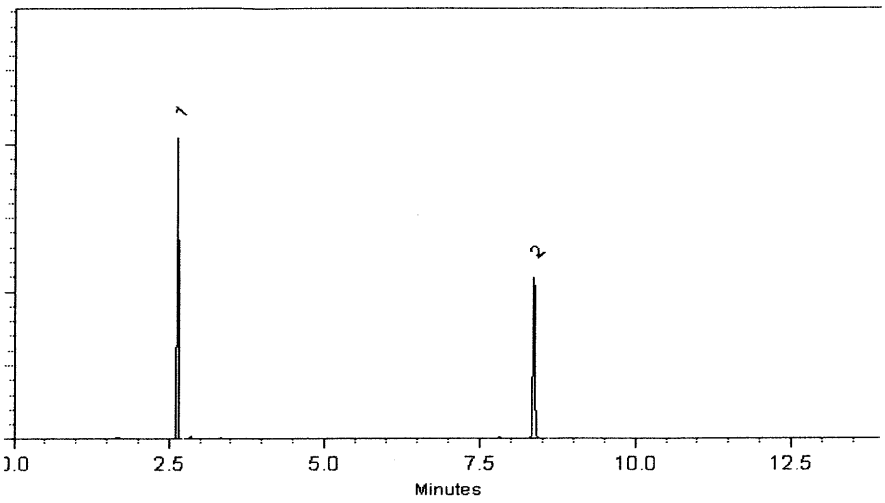
Carrier Gas:
helium-constant pressure 20 psi.

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.

Jeremy Johnson - Mfg. Supervisor

Date Mixed: 12-Apr-2021 **Balance:** 1128342314

Marlina Cowan - Operations Tech I

Date Passed: 19-Apr-2021

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
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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

250 Smith Street North Kingstown, Rhode Island 02852 **www.agilent.com/quality**

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
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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)

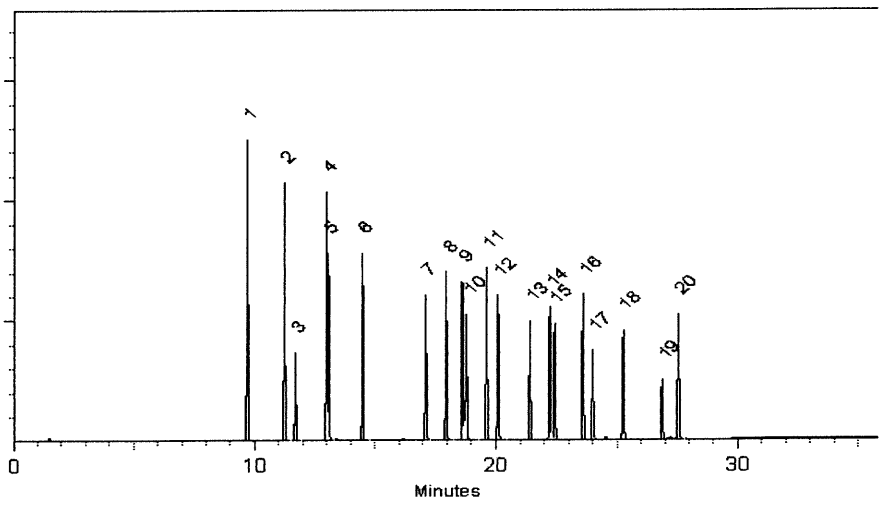
Carrier Gas:
helium-constant pressure 20 psi.

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
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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.

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ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

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)

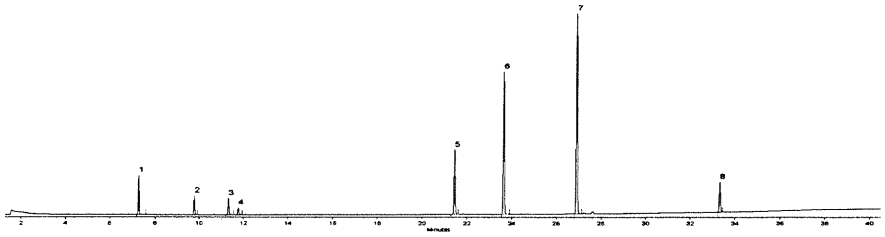
Carrier Gas:
helium-constant pressure 20 psi.

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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CERTIFIED REFERENCE MATERIAL

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

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)

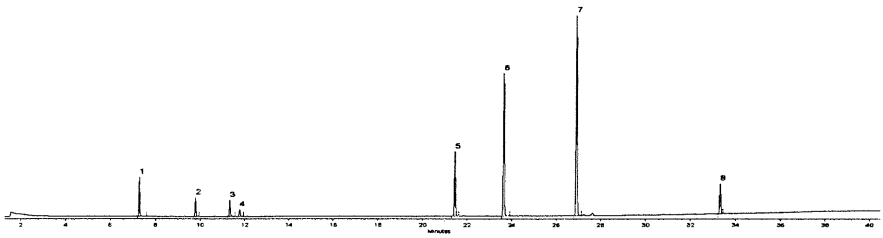
Carrier Gas:
helium-constant pressure 20 psi.

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

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)

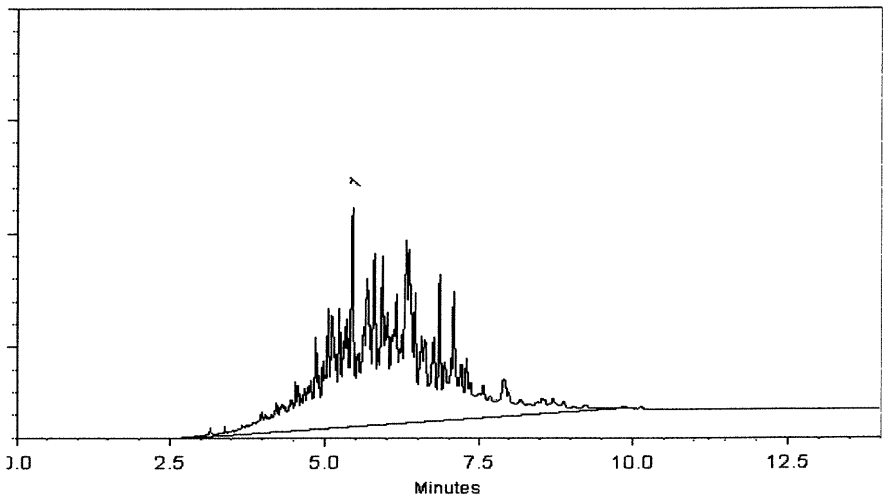
Carrier Gas:
helium-constant pressure 20 psi.

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.

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

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 79136
Lot Number: 030818
Description: Mirex

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

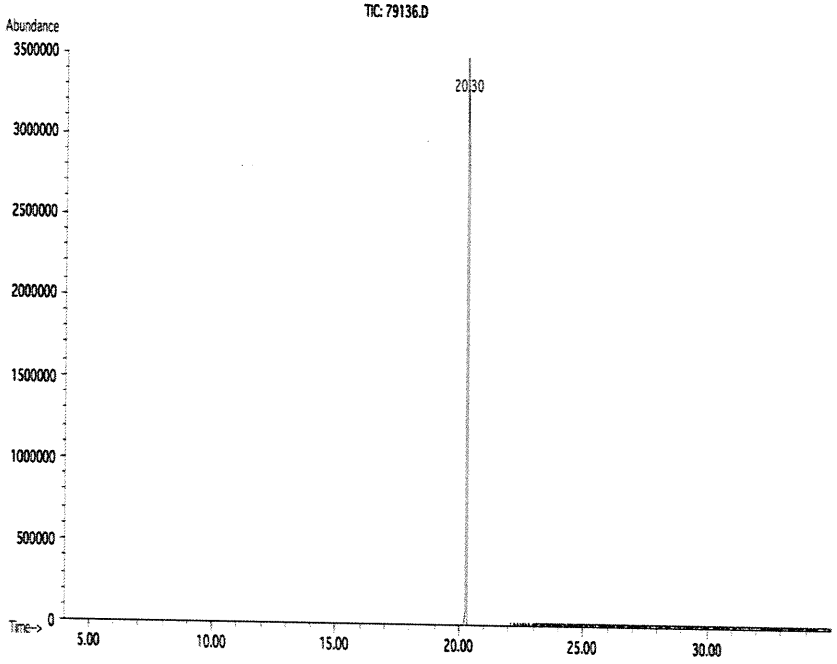
Gabriel Helland 030818
Formulated By: Gabriel Helland DATE

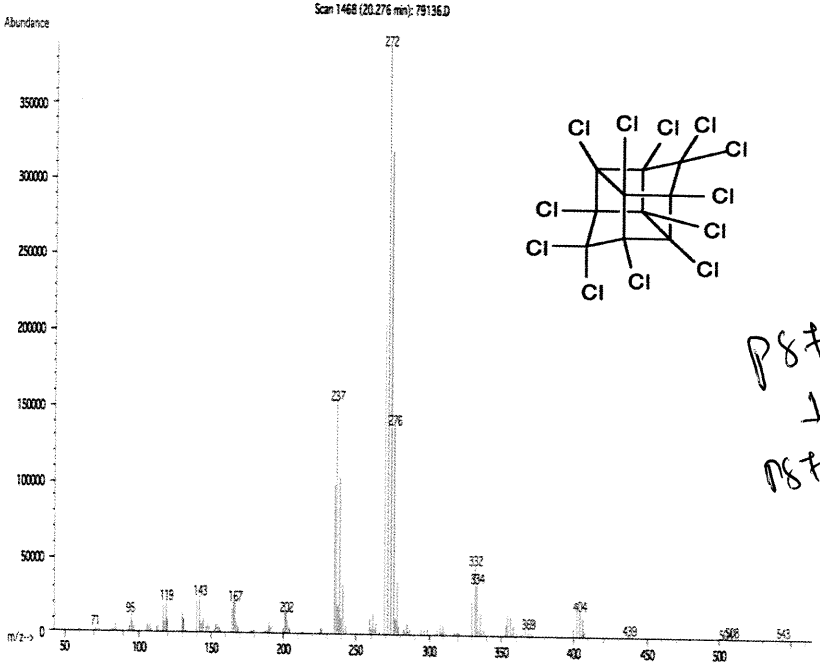
Pedro Rentas 030818
Reviewed By: Pedro L. Rentas DATE

Expiration Date: 030823
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 2506734D 5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 100.0 0.057 Flask Uncertainty

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	7018700	1000	99.5	0.5	0.10051	0.10065	1001.4	10.2	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.





P8732
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P8736 AJ 07/30/19

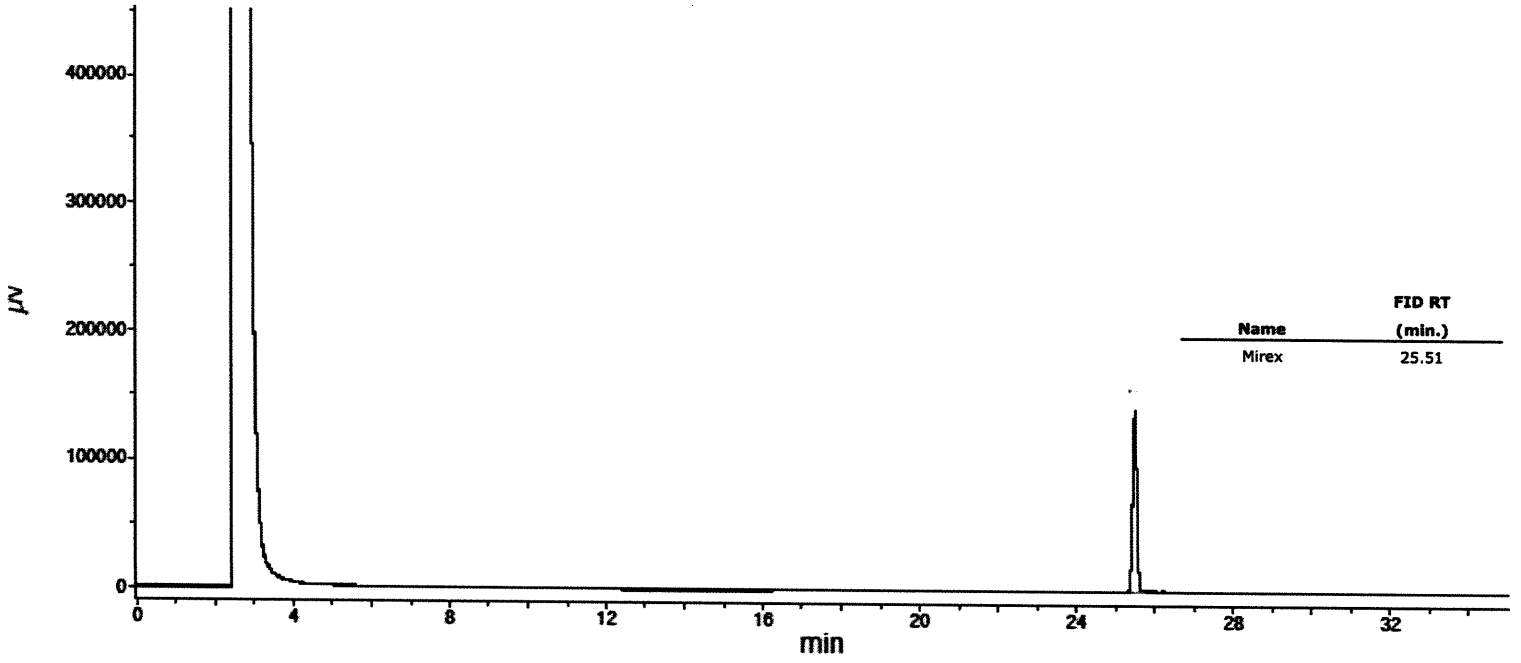
- **The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.**
- **Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).**
- **Standards are certifed (+/-) 0.5% of the stated 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 25, "P79136 L030818 [1000µg/mL in Acetone]"

Run Length: 35.00 min, 21000 points at 10 points/second.
Created: Fri, Mar 9, 2018 at 3:46:52 AM.
Sampled: Sequence "030818-GC3M1", Method "GC3-M1".
Analyzed using Method "GC3-M1".

Comments

GC3-M1 Analysis by Candice Warren
Column ID SPB-608 30 meter X 0.53mm X5µm film thickness
Flow rates: Helium (carrier) = 5mL/min, Helium (make-up) = 25mL/min
Hydogen (make-up) = 30mL/min, Air (make-up) = 350mL/min
Oven Profile: Temp 1 = 150°C (Time 1 = 4 min), Temp 2 = 290°C (Time 2 = 13.5 min)
Rate = 8°C/min, Total run time = 35 min
Injector temp. = 200°C, FID Temp. = 300°C. FID Signal = Edaq Channel 1
Standard injection =1.5µL, Range=3



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

Catalog No. : 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)

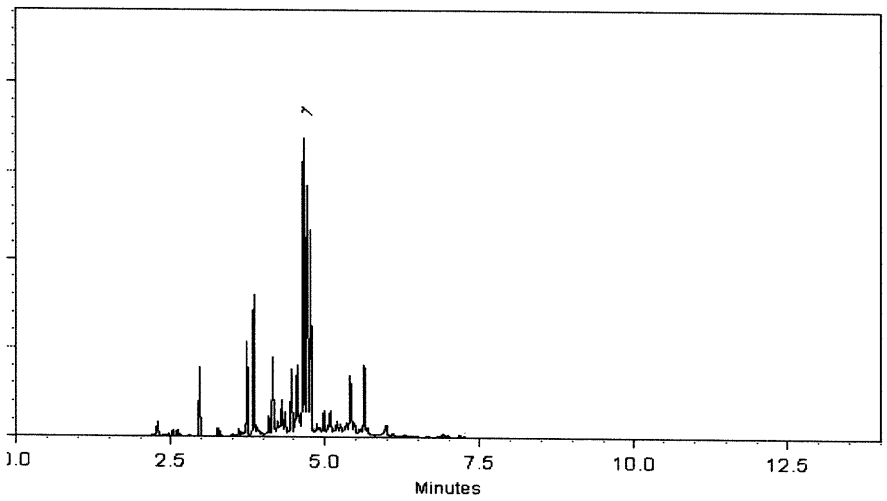
Carrier Gas:
helium-constant pressure 20 psi.

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

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

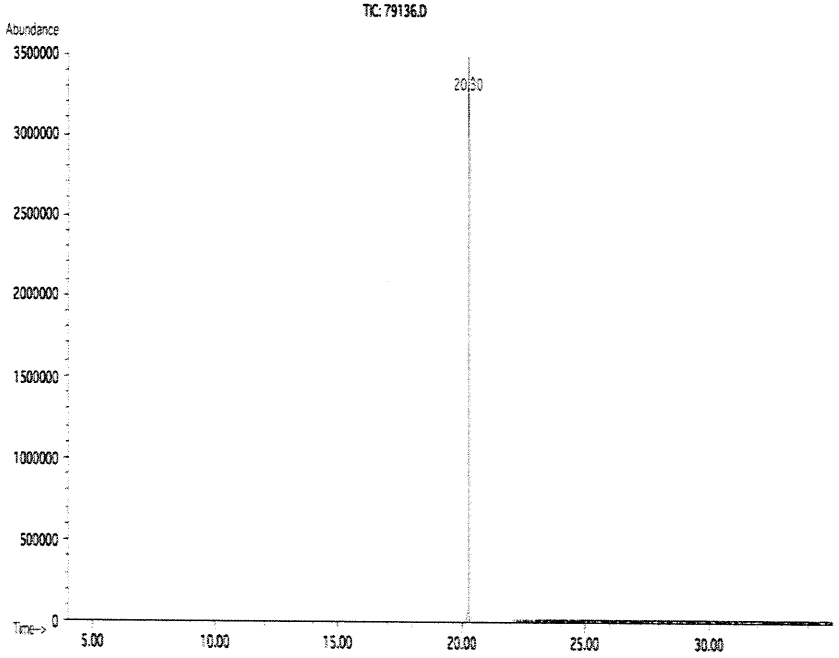
Expiration Date: 061825
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 23060

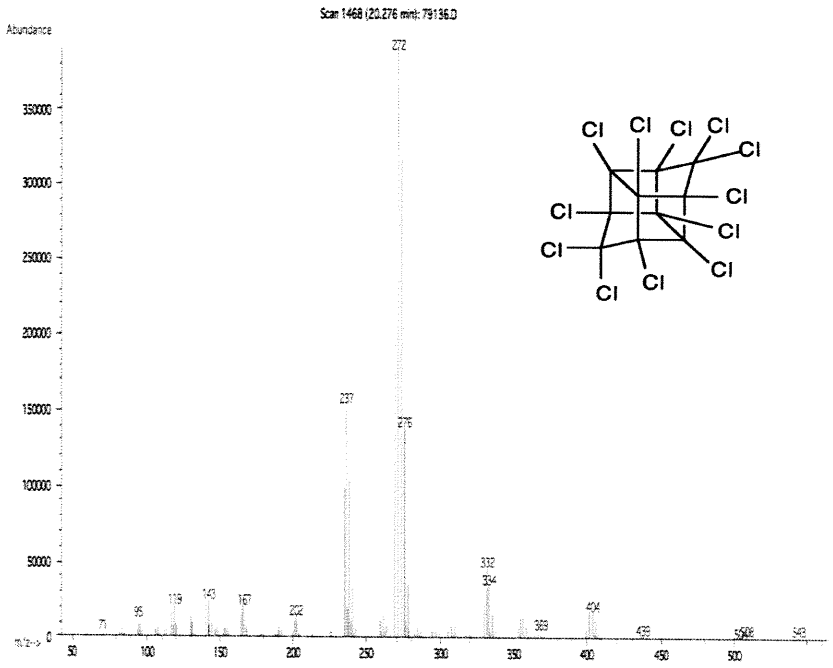
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 50.0 0.001 Flask Uncertainty

	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)

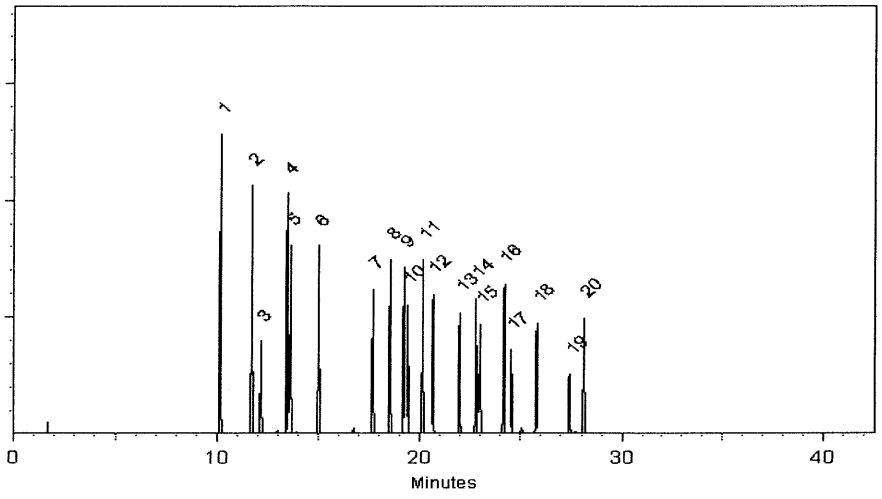
Carrier Gas:
helium-constant pressure 20 psi.

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.

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

avantor™ | J.T.Baker®

W2938
opened 07/25/2022 JP

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

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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