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Prep Standard - Chemical Standard Summary

Order ID : O3649

Test : PCB Group1

Prepbatch ID : PB154254,

Sequence ID/Qc Batch ID: PQ071823,

Standard ID :

EP2316,EP2350,EP261,PP22064,PP22138,PP22206,PP22207,PP22208,PP22209,PP22210,PP22211,PP22212,PP22213,PP22214,PP22215,PP22216,PP22217,PP22218,PP22219,PP22220,PP22221,PP22222,PP22223,PP22224,PP22225,PP22226,PP22227,PP22228,PP22229,PP22230,PP22231,PP22232,PP22233,PP22234,PP22235,PP22236,PP22237,PP22238,PP22239,PP22240,PP22241,PP22242,PP22243,PP22244,PP22245,PP22246,PP22247,PP22248,PP22249,PP22250,PP22251,PP22252,PP22253,PP22254,PP22255,PP22256,PP22257,PP22258,PP22259,PP22260,PP22261,PP22262,PP22263,

Chemical ID :

E2865,E3465,E3519,E3520,E3534,E3536,M5211,P10102,P10155,P10480,P10495,P10497,P10792,P11049,P11054,P11373,P11494,P11504,P11509,P11516,P11518,P11578,P11584,P11594,P11739,P12202,

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
314	1.1 H2SO4 SOLN	EP2316	03/29/2023	09/29/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 03/29/2023

FROM 1000.00000ml of M5211 = Final Quantity: 2000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
230	1:1ACETONE/HEXANE	EP2350	06/17/2023	12/16/2023	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 06/17/2023

FROM 8000.00000ml of E3519 + 8000.00000ml of E3520 = Final Quantity: 8000.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3857	5000 PPB PCB SPIKE SOLUTION 2ND SOURCE	PP22064	05/26/2023	11/10/2023	Abdul Mirza	None	None	Ankita Jodhani 05/26/2023

FROM 0.50000ml of P11373 + 99.50000ml of E3465 = 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	PP22138	06/20/2023	12/16/2023	Ankita Jodhani	None	None	Yogesh Patel 06/20/2023

FROM 1.00000ml of P10792 + 999.00000ml of E3519 = Final Quantity: 1000.000 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	PP22206	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P11739 + 9.00000ml of E3520 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
202	AR1660 1000/100 ppb working solution 1st source	PP22207	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P10480 + 99.40000ml of E3520 + 0.50000ml of PP22206 = 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
203	AR1660 750 PPB STD	PP22208	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22207 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
204	AR1660 500 PPB STD	PP22209	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22207 = 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
205	AR1660 250 PPB STD	PP22210	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22207 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
206	AR1660 50 PPB STD	PP22211	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22209 = 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
213	AR1221 1000 PPB WORKING SOLUTION	PP22212	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P11578 + 99.40000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1079	AR1221 750 PPB STD	PP22213	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22212 = 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
222	AR1221 500 PPB STD	PP22214	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22212 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1080	AR1221 250 PPB STD	PP22215	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22212 = 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
1081	AR1221 50 PPB STD	PP22216	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22214 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
214	AR1232 1000 PPB WORKING SOLUTION	PP22217	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P11584 + 99.40000ml of E3520 + 0.50000ml of PP22206 = 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
1063	AR1232 750 PPB STD	PP22218	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22217 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
223	AR1232 500 PPB STD	PP22219	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22217 = 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
1064	AR1232 250 PPB STD	PP22220	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22217 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1065	AR1232 50 PPB STD	PP22221	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22219 = 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
215	AR1242 1000 PPB WORKING STD	PP22222	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P11049 + 99.40000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1067	AR1242 750 PPB STD	PP22223	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22222 = 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
224	AR1242 500 PPB STD	PP22224	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22222 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1068	AR1242 250 PPB STD	PP22225	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22222 = 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
1069	AR1242 50 PPB STD	PP22226	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22224 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
216	AR1248 1000 PPB WORKING STD	PP22227	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P11054 + 99.40000ml of E3520 + 0.50000ml of PP22206 = 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
1075	AR1248 750 PPB STD	PP22228	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22227 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
225	AR1248 500 PPB STD	PP22229	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22227 = 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
1076	AR1248 250 PPB STD	PP22230	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22227 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1077	AR1248 50 PPB STD	PP22231	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22229 = 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
217	AR1254 1000 PPB WORKING STD	PP22232	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P10495 + 99.40000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1071	AR1254 750 PPB STD	PP22233	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22232 = 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
226	AR1254 500 PPB STD	PP22234	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22232 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1072	AR1254 250 PPB STD	PP22235	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22232 = 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
1073	AR1254 50 PPB STD	PP22236	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22234 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1529	AR1262 1000 PPB Working Solution	PP22237	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P10497 + 99.40000ml of E3520 + 0.50000ml of PP22206 = 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
3753	AR1262 750 PPB STD	PP22238	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22237 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1530	AR1262 500 PPB STD	PP22239	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22237 = 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
3754	AR1262 250 PPB STD	PP22240	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22237 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3755	AR1262 50 PPB STD	PP22241	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22239 = 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
1532	AR1268 1000 PPB Working Solution	PP22242	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.10000ml of P11594 + 99.40000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3820	AR1268 750 PPB STD	PP22243	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.25000ml of E3520 + 0.75000ml of PP22242 = 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
1533	AR1268 500 PPB STD	PP22244	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22242 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3821	AR1268 250 PPB STD	PP22245	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.75000ml of E3520 + 0.25000ml of PP22242 = 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
3822	AR1268 50 PPB STD	PP22246	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.90000ml of E3520 + 0.10000ml of PP22244 = Final Quantity: 1.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
404	AR1660 100 PPM Stock Solution 2nd Source	PP22247	06/30/2023	12/29/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P12202 + 9.00000ml of E3534 = 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
405	AR1660 1000/100 PPB ICV STD	PP22248	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 49.25000ml of E3520 + 0.25000ml of PP22206 + 0.50000ml of PP22247 = Final Quantity: 50.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
406	AR1660 500 PPB ICV	PP22249	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22248 = 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
3789	AR1221 1000 PPB WORKING SOL.2ND SOURCE(AGILENT)	PP22250	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P11494 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3790	AR1221 500 PPB ICV(AGILENT)	PP22251	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22250 = 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
1887	AR1232 1000 PPB Working Sol. 2nd Source	PP22252	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P10102 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1888	AR1232 500 PPB ICV	PP22253	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22252 = 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
1889	AR1242 1000 PPB Working Sol. 2nd Source	PP22254	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P11504 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1891	AR1242 500 PPB ICV	PP22255	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22254 = 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
1890	AR1248 1000 PPB Working Sol. 2nd Source	PP22256	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P11509 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1892	AR1248 500 PPB ICV	PP22257	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22256 = Final Quantity: 1.000 ml

CHEMTECH

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1893	AR1254 1000 PPB Working Sol. 2nd Source	PP22258	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P11516 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1894	AR1254 500 PPB ICV	PP22259	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22258 = Final Quantity: 1.000 ml

CHEMTECH

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3757	AR1262 1000 PPB Working Solution second source	PP22260	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P10155 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3758	AR1262 500 PPB STD ICV	PP22261	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22260 = Final Quantity: 1.000 ml

CHEMTECH

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

Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3817	AR1268 1000 ppb Working Soln. 2nd source	PP22262	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 1.00000ml of P11518 + 98.50000ml of E3520 + 0.50000ml of PP22206 = Final Quantity: 100.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3823	AR1268 500 PPB STD ICV	PP22263	06/30/2023	12/17/2023	Ankita Jodhani	None	None	Yogesh Patel 07/05/2023

FROM 0.50000ml of E3520 + 0.50000ml of PP22262 = Final Quantity: 1.000 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	9005-05 / Acetone Ultra (cs/4x4L)	22J2461015	11/30/2023	02/21/2023 / Rajesh	02/15/2023 / Rajesh	E3465

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	12/16/2023	06/17/2023 / Rajesh	06/15/2023 / Rajesh	E3519

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)	23C2462011	01/19/2024	06/17/2023 / Rajesh	06/15/2023 / Rajesh	E3520

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)	12/18/2025	12/29/2023	06/29/2023 / Rajesh	06/29/2023 / Rajesh	E3534

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)	23C2462011	01/13/2024	07/13/2023 / Rajesh	07/05/2023 / Rajesh	E3536

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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-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	22D0862014	01/20/2025	08/22/2022 /	04/26/2022 / mohan	M5211

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-302-1 / Aroclor 1232	CF-2197A	12/30/2023	06/30/2023 / Ankita	12/03/2020 / Abdul	P10102

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-372-1 / Aroclor 1262	0006499800	12/30/2023	06/30/2023 / Ankita	01/12/2021 / Abdul	P10155

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32039 / PCB Mix, Aroclor 1016/1260, 1000ug/mL, hexane, 1mL/ampul	A0163157	12/30/2023	06/30/2023 / Ankita	03/19/2021 / Abdul	P10480

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32011 / PCB Mix, Aroclor 1254, 1000ug/mL, Hexane, 1mL/ampul	A0160220	12/30/2023	06/30/2023 / Ankita	03/19/2021 / Abdul	P10495

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32409 / PCB Stock Solution, Aroclor 1262 Std, 1mL, Hexane	A0167722	12/30/2023	06/30/2023 / Ankita	03/19/2021 / Ankita	P10497

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32000 / Pesticide Mix, CLP method, Pesticide Surrogate Mix, 200ug/mL, Acetone, 1mL	A0172332	12/20/2023	06/20/2023 / Ankita	06/17/2021 / dhaval	P10792

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32009 / PCB Mix, Aroclor 1242, 1000ug/mL, Hexane, 1mL/ampul	A0167551	12/30/2023	06/30/2023 / Ankita	09/03/2021 / Abdul	P11049

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32010 / PCB Mix, Aroclor 1248, 1000ug/mL, Hexane, 1mL/ampul	A0162497	12/30/2023	06/30/2023 / Ankita	09/03/2021 / Abdul	P11054

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	20064 / Aroclor 1016/1260	033121	11/26/2023	05/26/2023 / Abdul	02/03/2022 / yogesh	P11373

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-292-1 / Aroclor 1221	0006535333	12/30/2023	06/30/2023 / Ankita	02/21/2022 / Ankita	P11494

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-312-1 / Aroclor 1242	0006665550	12/30/2023	06/30/2023 / Ankita	02/21/2022 / Ankita	P11504

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-342-1 / Aroclor 1248	0006626997	12/30/2023	06/30/2023 / Ankita	02/21/2022 / Ankita	P11509

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-352-1 / Aroclor 1254	CS-2321	12/30/2023	06/30/2023 / Ankita	02/21/2022 / Ankita	P11516

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-382-1 / Aroclor 1268	0006587800	12/30/2023	06/30/2023 / Ankita	02/21/2022 / Ankita	P11518

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32007 / PCB Mix, Aroclor 1221, 1000ug/mL, Hexane, 1mL/ampul	A0175456	12/30/2023	06/30/2023 / Ankita	03/18/2022 / Abdul	P11578

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32008 / PCB Mix, Aroclor 1232, 1000ug/mL, Hexane, 1mL/ampul	A0173309	12/30/2023	06/30/2023 / Ankita	03/18/2022 / Abdul	P11584

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32410 / PCB Stock Solution, Aroclor 1268 Std, 1mL, Hexane	A0181782	12/30/2023	06/30/2023 / Ankita	03/18/2022 / Abdul	P11594

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32000 / Pesticide Mix, CLP method, Pesticide Surrogate Mix, 200ug/mL, Acetone, 1mL	A0179404	12/30/2023	06/30/2023 / Ankita	05/27/2022 / Sohil	P11739

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	20064 / Aroclor 1016/1260	033121	12/30/2023	06/30/2023 / Ankita	11/16/2022 / Ankita	P12202

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: 20064
Lot Number: 033121
Description: CLP PCB'S - Aroclor Mix
Aroclors 1016 & 1260
Expiration Date: 033131
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Hexane	233256

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.1 0.058 Flask Uncertainty

Prashant Chauhan	033121	
Formulated By:	Prashant Chauhan	DATE
Pedro Rentas	033121	
Reviewed By:	Pedro L. Rentas	DATE

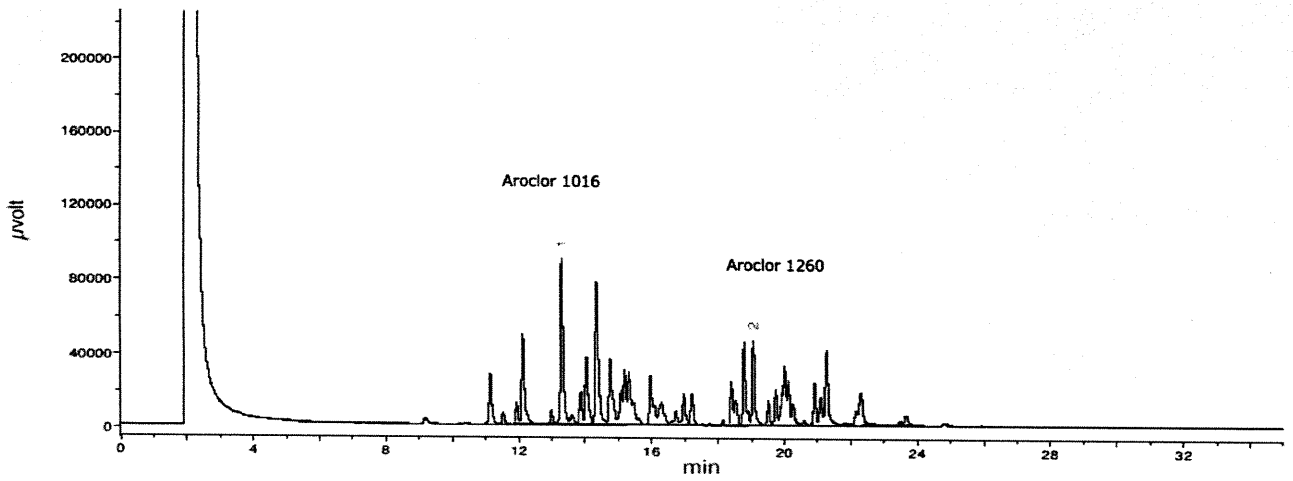
	Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	Aroclor 1016	15	020491JC	1000	100	0.2	0.20007	0.20025	1000.9	4.1	12674-11-2	N/A	N/A
2.	Aroclor 1260	21	020491JC	1000	100	0.2	0.20007	0.20035	1001.4	4.1	11096-82-5	0.5mg/m3	orl-rat 1315mg/kg

- 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).

P 11364
↓
P11373

Y.P.
02/03/22

Comments
GC3-M1 Analysis by Melissa Stonier
Column ID SPB-608 30 meter X 0.53mm X5µm film thickness
Flow rates: Helium (carrier) = 5mL/min, Helium (make-up) = 25mL/min
Hydrogen (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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www.restek.com

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.

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)

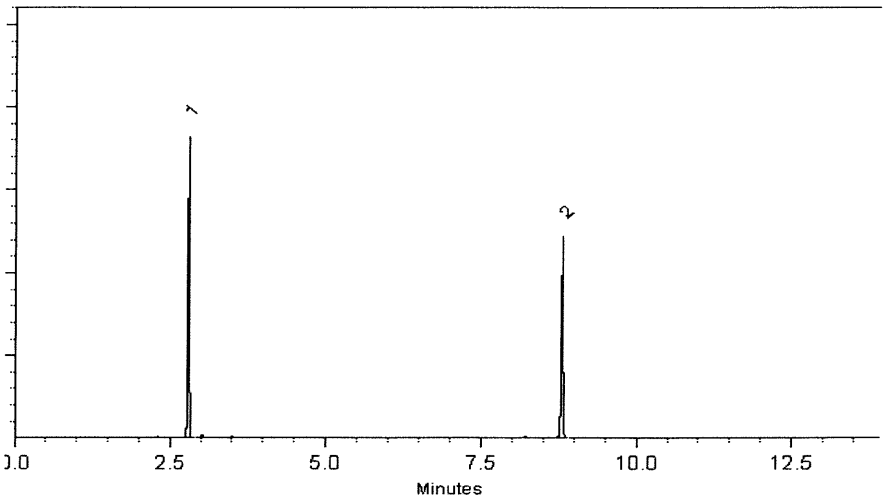
Carrier Gas:
helium-constant pressure 20 psi.

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

Acetone
CMOS

avantor™ | J.T.Baker®

Material No.: 9005-05
Batch No.: 22J2461015
Manufactured Date: 2022-10-20
Retest Date: 2027-10-19
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected for water)	≥ 99.5 %	99.7 %
Color (APHA)	≤ 10	< 5
Residue after Evaporation	≤ 5 ppm	< 1 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.1
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	3.4 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

>>> Continued on page 2 >>>

E 3465
Recd. by RP on 2/15/23

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Material No.: 9005-05
Batch No.: 22J2461015

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	15 par/ml
Particle Count - 1.0 µm and greater (Rion KS42AF)	≤ 8 par/ml	4 par/ml

>>> Continued on page 3 >>>

Acetone
CMOS

avantor™ | J.T.Baker®

Material No.: 9005-05
Batch No.: 22J2461015

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

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

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 6/13/23

E3519

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.: 23C2462011
Manufactured Date: 2023-03-10
Expiration Date: 2024-06-08
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	0.3 ppm
Substances Darkened by H_2SO_4	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	< 0.01 %

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

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

Recd. by RP on 6/15/23

E 3520

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700

Acetone
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 RS on 6/29/23

E 3534

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.: 23C2462011
Manufactured Date: 2023-03-10
Expiration Date: 2024-06-08
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	0.3 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

Rec'd by RP on 7/5/23

E 3536

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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Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

M5210 - M5217
MB

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 22D0862014
Manufactured Date: 2022-02-23
Retest Date: 2027-02-22
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS - Assay (H_2SO_4)	95.0 - 98.0 %	96.5 %
Appearance	Passes Test	Passes Test
ACS - Color (APHA)	≤ 10	5
ACS - Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS - Substances Reducing Permanganate (as SO2)	≤ 2 ppm	< 2 ppm
Ammonium (NH_4)	≤ 1 ppm	< 1 ppm
Chloride (Cl)	≤ 0.1 ppm	< 0.1 ppm
Nitrate (NO_3)	≤ 0.2 ppm	< 0.1 ppm
Phosphate (PO_4)	≤ 0.5 ppm	< 0.1 ppm
Trace Impurities - Aluminum (Al)	≤ 30.0 ppb	1.7 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities - Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities - Chromium (Cr)	≤ 6.0 ppb	< 0.4 ppb
Trace Impurities - Cobalt (Co)	≤ 0.5 ppb	< 0.3 ppb
Trace Impurities - Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities - Gold (Au)	≤ 10.0 ppb	< 0.2 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities - Iron (Fe)	≤ 50.0 ppb	2.0 ppb
Trace Impurities - Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities - Magnesium (Mg)	≤ 7.0 ppb	0.6 ppb
Trace Impurities - Manganese (Mn)	≤ 1.0 ppb	< 0.4 ppb
Trace Impurities - Mercury (Hg)	≤ 0.5 ppb	< 0.1 ppb
Trace Impurities - Nickel (Ni)	≤ 2.0 ppb	< 0.3 ppb
Trace Impurities - Potassium (K)	≤ 500.0 ppb	< 2.0 ppb
Trace Impurities - Selenium (Se)	≤ 50.0 ppb	12.1 ppb
Trace Impurities - Silicon (Si)	≤ 100.0 ppb	4.4 ppb
Trace Impurities - Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

Sulfuric Acid
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis
Low Selenium

avantor™ | J.T.Baker®

Material No.: 9673-33
Batch No.: 22D0862014

Test	Specification	Result
Trace Impurities - Sodium (Na)	≤ 500.0 ppb	6.2 ppb
Trace Impurities - Strontium (Sr)	≤ 5.0 ppb	< 0.2 ppb
Trace Impurities - Tin (Sn)	≤ 5.0 ppb	< 0.8 ppb
Trace Impurities - Zinc (Zn)	≤ 5.0 ppb	0.6 ppb

For Laboratory,Research,or Manufacturing Use

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

James T Ethier

Jamie Ethier
Vice President Global Quality

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1232 Standard

Product Number: PP-302-1 **Page:** 1 of 1

Lot Number: CF-2197A **Lot Issue Date:** 05-Jul-2016 **Expiration Date:** 31-Aug-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1232	011141-16-5	NT01717	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

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

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

P10098 & P10102

AR 12/03/20

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ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1262 Standard

Product Number: PP-372-1 **Page:** 1 of 1

Lot Number: 0006499800 **Lot Issue Date:** 04-Nov-2019 **Expiration Date:** 30-Nov-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent Technologies ISO 9001 registered quality system. A review of the gravimetric preparation data by our ISO 17025 accredited laboratory serves to verify the concentration of each analyte. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1262	037324-23-5	RM14263	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

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

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

P10151
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P10155

AR
01/12/2021

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ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

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

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 32039 **Lot No.:** A0163157

Description : Aroclor® 1016/1260 Mix

Aroclor® 1016/1260 Mix 1,000 µg/mL, Hexane, 1mL/ampul

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

Expiration Date : November 30, 2026 **Storage:** 25°C nominal

Handling: This product contains PCBs. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1016	1,007.0 µg/mL	+/- 5.8683	µg/mL	Gravimetric
	CAS # 12674-11-2 (Lot 04)		+/- 31.9082	µg/mL	Unstressed
	Purity ----%		+/- 41.6868	µg/mL	Stressed
2	Aroclor 1260	1,008.0 µg/mL	+/- 5.8741	µg/mL	Gravimetric
	CAS # 11096-82-5 (Lot 07)		+/- 31.9399	µg/mL	Unstressed
	Purity ----%		+/- 41.7282	µg/mL	Stressed

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

P10476
&
P10480

AR
02/19/21

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

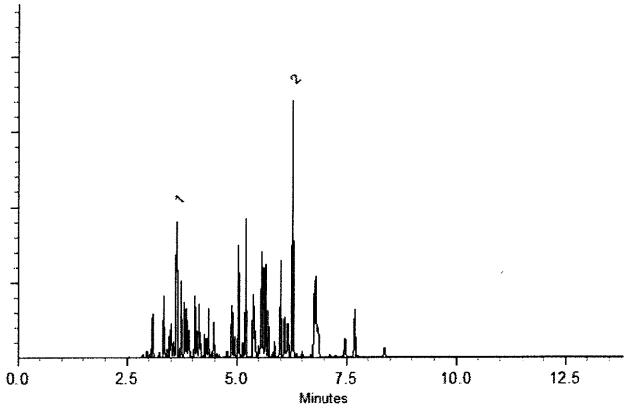
Carrier Gas:
helium-constant pressure 20 psi.

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

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



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

Tom Suckar - Mix Technician

Date Mixed: 03-Aug-2020 **Balance:** B442140311

Justine Albertson - Operations Tech-ARM QC

Date Passed: 05-Aug-2020

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

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

Catalog No. : 32011 **Lot No.:** A0160220

Description : Aroclor® 1254 Standard

Aroclor® 1254 Standard 1,000 µg/mL, Hexane, 1mL/ampul

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

Expiration Date : July 31, 2026 **Storage:** 25°C nominal

Handling: This product contains PCBs.

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1254		1,005.0 µg/mL	+/- 5.9694	µg/mL	Gravimetric
	CAS # 11097-69-1	(Lot 124-191-B)		+/- 31.8658	µg/mL	Unstressed
	Purity ----%			+/- 41.6201	µg/mL	Stressed

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

P10491
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P10495

AR
03/19/21

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

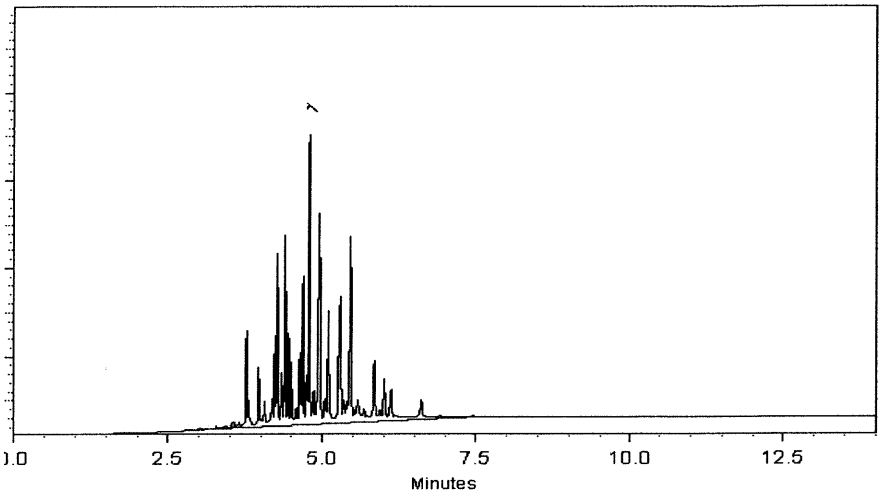
Carrier Gas:
helium-constant pressure 20 psi.

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

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



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

Kylie Struble - Operations Technician I

Date Mixed: 22-Apr-2020 **Balance:** 1128360905

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 28-Apr-2020

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

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 32409 **Lot No.:** A0167722

Description : Aroclor® 1262 Standard

Aroclor® 1262 Standard 1,000 µg/mL, 1mL/ampul, Hexane

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

Expiration Date : April 30, 2027 **Storage:** 25°C nominal

Handling: This product contains PCBs. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1262	1,004.0 µg/mL	+/- 5.9635	µg/mL	Gravimetric
	CAS # 37324-23-5 (Lot 10849100)		+/- 31.8340	µg/mL	Unstressed
	Purity ----%		+/- 41.5787	µg/mL	Stressed

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

P10496
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P10500

AJ
09/19/21

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

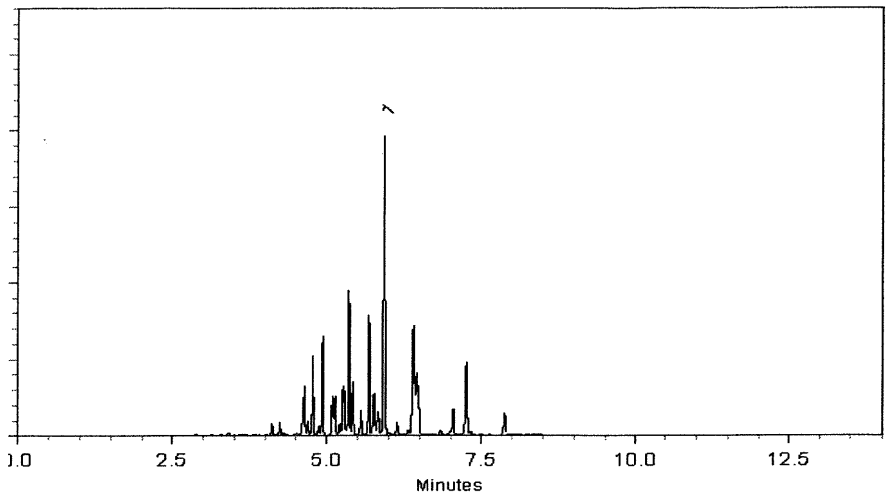
Carrier Gas:
helium-constant pressure 20 psi.

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

Inj. Temp:
250°C

Det. Temp:
300°C

Det. Type:
ECD



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

Sam Moodler - Operations Tech I

Date Mixed: 03-Jan-2021 **Balance:** B707717271

Marlina Cowan - Operations Tech I

Date Passed: 05-Jan-2021

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

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

P11046 To P11050
AR 09/9/2021

Catalog No. : 32009 **Lot No.:** A0167551

Description : Aroclor® 1242 Standard

Aroclor® 1242 Standard 1,000 µg/mL, Hexane, 1mL/ampul

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

Expiration Date : March 31, 2027 **Storage:** 25°C nominal

Handling: This product contains PCBs. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1242	1,006.0 µg/mL	+/- 5.9753	µg/mL	Gravimetric
	CAS # 53469-21-9 (Lot 01141-A)		+/- 31.8975	µg/mL	Unstressed
	Purity ----%		+/- 41.6615	µg/mL	Stressed

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

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

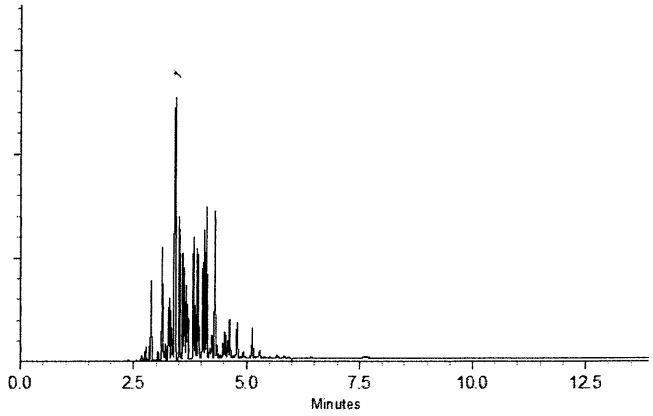
Carrier Gas:
helium-constant pressure 20 psi.

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.

Tom Suckar - Mix Technician

Date Mixed: 28-Dec-2020 **Balance:** B707717271

Justine Albertson - Operations Tech-ARM QC

Date Passed: 30-Dec-2020

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

P11046
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P11056

AR
09/9/2021

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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. : 32010 **Lot No.:** A0162497

Description : Aroclor® 1248 Standard

Aroclor® 1248 Standard 1,000µg/mL, Hexane, 1mL/ampul

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

Expiration Date : October 31, 2026 **Storage:** 25°C nominal

Handling: This product contains PCBs.

P11051 to P11055
AR
09/9/2021

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1248	1,006.0 µg/mL	+/- 5.9753	µg/mL	Gravimetric
	CAS # 12672-29-6 (Lot 9303900)		+/- 31.8975	µg/mL	Unstressed
	Purity ----%		+/- 41.6615	µg/mL	Stressed

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

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

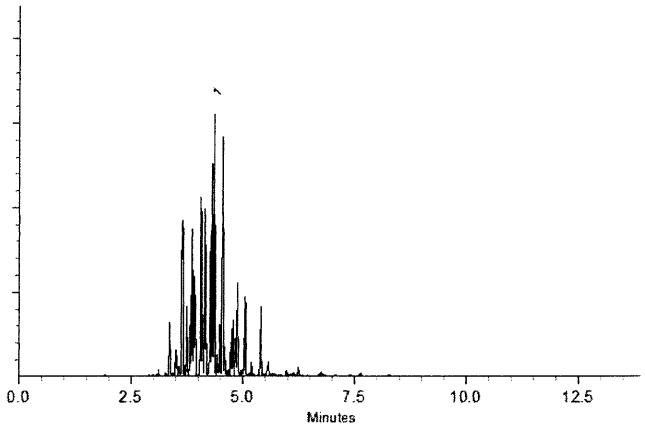
Carrier Gas:
helium-constant pressure 20 psi.

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.

Kylie Struble - Operations Technician I

Date Mixed: 13-Jul-2020 **Balance:** 1128360905

Justine Albertson - Operations Tech-ARM QC

Date Passed: 16-Jul-2020

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

P11051
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P11055

AR 9/9/2021

AJ
02/21/22

P11493
↓
P11497

Agilent

Certificate of Analysis

Product Name: Aroclor 1221 Standard

Product Number: PP-292-1 **Lot Issue Date:** 28-Apr-2020

Lot Number: 0006535333 **Expiration Date:** 31-May-2024

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
Aroclor 1221	011104-28-2	RM04278	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

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.

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:

M Bourgeois

Monica Bourgeois
QMS Representative

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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

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ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name:	Aroclor 1242 Standard	**Lot Number:**	0006665550
Product Number:	PP-312-1	**Lot Issue Date:**	08-Feb-2022
Storage Conditions:	Store at Room Temperature (15° to 30°C).	**Expiration Date:**	31-Jan-2027

	CERTIFIED VALUES			
Component Name	Concentration	Expanded Uncertainty	CAS#	Analyte Lot
Aroclor 1242	100.4	± 0.5 µg/mL	053469-21-9	NT01020

Matrix: isooctane (2,2,4-trimethylpentane)

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard 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 above.

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 analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

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.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Intended Use:
This analytical reference standard 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.

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

P11533 + P11537

AJ 02/21/22

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

ISO 17034

Agilent
Trusted Answers

Reference Material Certificate

Product Name:	Aroclor 1248 Standard	**Lot Number:**	0006626997
Product Number:	PP-342-1	**Lot Issue Date:**	17-Aug-2021
Storage Conditions:	Store at Room Temperature (15° to 30°C).	**Expiration Date:**	30-Sep-2025

	CERTIFIED VALUES				
Component Name	Concentration		Expanded Uncertainty	CAS#	Analyte Lot
Aroclor 1248	100.3	±	0.5 µg/mL	012672-29-6	NT01582

Matrix: isooctane (2,2,4-trimethylpentane)

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard 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 above.

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 analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

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.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Intended Use:
This analytical reference standard 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.

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

P11508 ↓ P11512 AJ 12/21/22

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

Certificate of Analysis

Agilent

Aroclor 1254 Solution

Product Number: PP-352 **Page:** 1 of 1

Lot Number: CS-2321 **Lot Issue Date:** 04-May-2018 **Expiration Date:** 31-May-2026

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1254	011097-69-1	RM00922	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

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

P11513
↓
P11517

AJ
02/21/22

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

John Russo
President

Monica Bourgeois
Director of QA/RA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001
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TUV USA, Inc.

P11518 ↓ P11522 AJ 02/21/22

Agilent

Certificate of Analysis

Product Name: Aroclor 1268 Standard

Product Number: PP-382-1 **Lot Issue Date:** 09-Feb-2021

Lot Number: 0006587800 **Expiration Date:** 31-Mar-2029

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
Aroclor 1268	011100-14-4	RM00937	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

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.

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:

M Bourgeois

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

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ISO 17025 Cert No. AT-1937

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 32007 **Lot No.:** A0175456

Description : Aroclor® 1221 Standard

Aroclor® 1221 Standard 1,000 µg/mL, Hexane, 1mL/ampul

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

Expiration Date : November 30, 2027 **Storage:** 25°C nominal

Handling: This product contains PCBs. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1221	1,002.0 µg/mL	+/- 5.9516	µg/mL	Gravimetric
	CAS # 11104-28-2 (Lot 10210500)		+/- 31.7706	µg/mL	Unstressed
	Purity ----%		+/- 41.4958	µg/mL	Stressed

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

P 11578 ↓ P 11582 (S)

AR 04/30/22

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

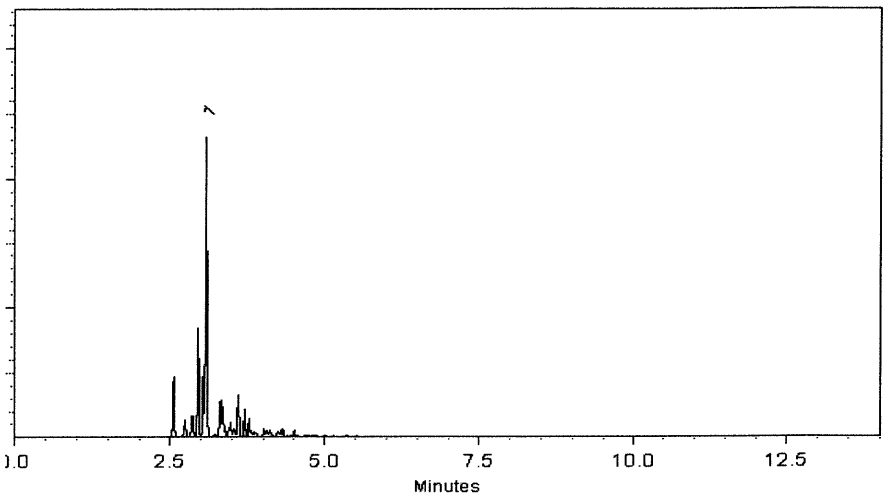
Carrier Gas:
helium-constant pressure 20 psi.

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: 16-Aug-2021 **Balance:** B442140311

Marlina Cowan - Operations Tech I

Date Passed: 18-Aug-2021

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

P11578 ↓ P11582 (5)

AR 04/30/22

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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. : 32008 **Lot No.:** A0173309

Description : Aroclor® 1232 Standard

Aroclor® 1232 Standard 1,000 µg/mL, Hexane, 1mL/ampul

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

Expiration Date : September 30, 2027 **Storage:** 25°C nominal

Handling: This product contains PCBs. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Aroclor 1232	1,001.0 µg/mL	+/- 5.9456 µg/mL	Gravimetric
	CAS # 11141-16-5 (Lot 15665-01)		+/- 31.7389 µg/mL	Unstressed
	Purity ----%		+/- 41.4544 µg/mL	Stressed

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

P11583 ↓ P11597 (S)

AR 04/30/22

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

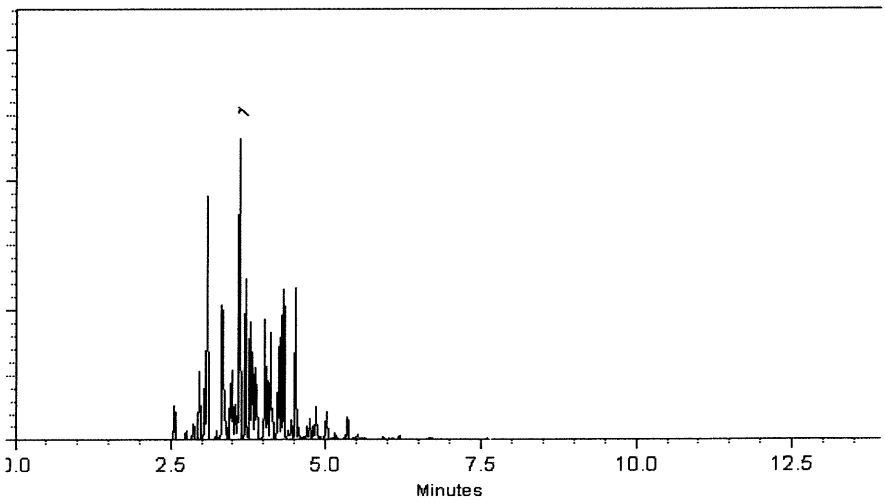
Carrier Gas:
helium-constant pressure 20 psi.

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: 13-Jun-2021 **Balance:** B442140311

Alexis Shelow - Operations Tech I

Date Passed: 16-Jun-2021

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

P11583 ↓ P11587 | (5)

AR 04/30/22

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 32410 **Lot No.:** A0181782

Description : Aroclor® 1268 Standard

Aroclor® 1268 Standard 1,000 µg/mL, 1mL/ampul, Hexane

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

Expiration Date : May 31, 2028 **Storage:** 25°C nominal

Handling: This product contains PCBs. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Aroclor 1268	1,001.4 µg/mL	+/- 5.9480	µg/mL	Gravimetric
	CAS # 11100-14-4 (Lot 10947000)		+/- 31.7516	µg/mL	Unstressed
	Purity ----%		+/- 41.4710	µg/mL	Stressed

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

P 11593 (5)
↓
P 11597

AR 04/30/2022

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

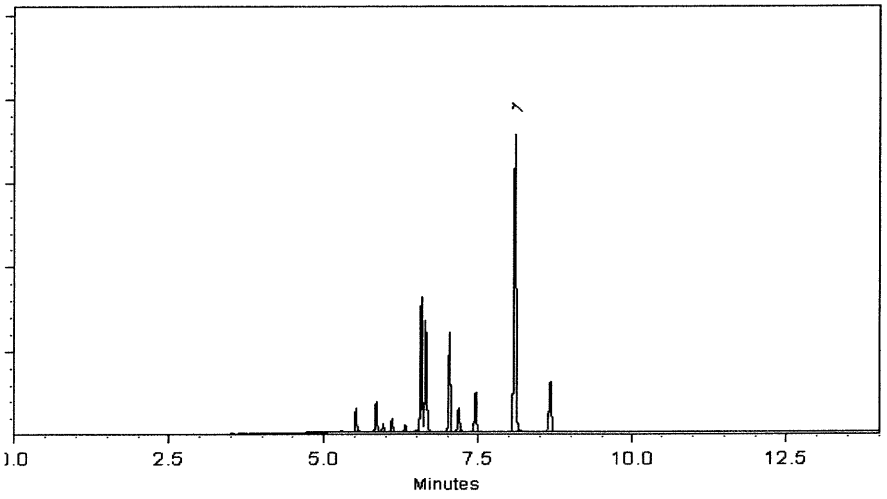
Carrier Gas:
helium-constant pressure 20 psi.

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.

Penelope Riglin - Operations Tech I

Date Mixed: 14-Feb-2022 **Balance:** 1128360905

Clara Windle - Operations Technician I

Date Passed: 17-Feb-2022

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

P 11593 (5)
↓
P 11597
04/30/2022

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Testing Laboratory
Certificate #3222.02

Certificate of Analysis

P11739 to P11748

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. : 32000 **Lot No.:** A0179404

Description : Pesticide Surrogate Mix

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

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

Expiration Date : March 31, 2028 **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)	200.8 µg/mL	+/- 1.1845	µg/mL	Gravimetric
	CAS # 2051-24-3 (Lot 30679)		+/- 6.3653	µg/mL	Unstressed
	Purity 99%		+/- 8.3146	µg/mL	Stressed

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

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

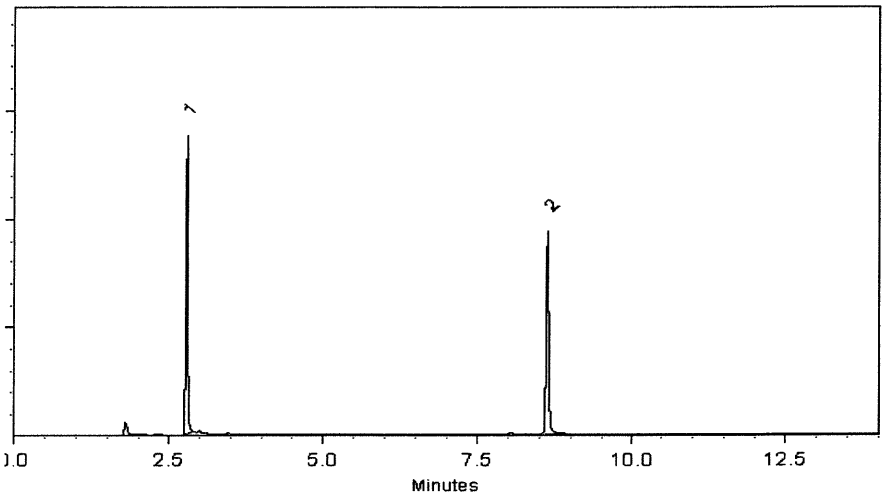
Carrier Gas:
helium-constant pressure 20 psi.

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.

Matt Fragassi - Mix Technician

Date Mixed: 09-Dec-2021 **Balance:** 1127510105

Clara Windle - Operations Technician I

Date Passed: 14-Dec-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.
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www.absolutestandards.com

Certified Reference Material CRM

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

CERTIFIED WEIGHT REPORT

Part Number: 20064
Lot Number: 033121
Description: CLP PCB'S - Aroclor Mix
Aroclors 1016 & 1260
Expiration Date: 033131
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 1000
NIST Test ID#: 6UTB

Solvent(s):	Lot#
Hexane	233256

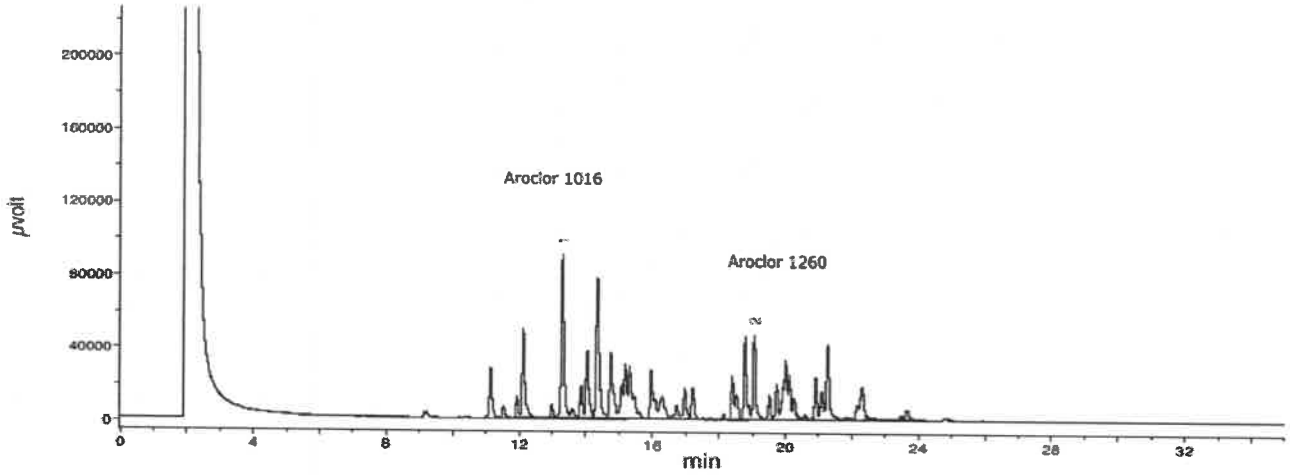
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 200.1 0.058 Flask Uncertainty

Prashant Chauhan	033121	
Formulated By:	Prashant Chauhan	DATE
Pedro Rentas	033121	
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. Aroclor 1016	15	020491JC	1000	100	0.2	0.20007	0.20025	1000.9	4.1	12674-11-2	N/A	N/A
2. Aroclor 1260	21	020491JC	1000	100	0.2	0.20007	0.20035	1001.4	4.1	11096-82-5	0.5mg/m3	orl-rat 1315mg/kg

- 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).

Comments
GC3-M1 Analysis by Melissa Stonier
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



P12201
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P12210

AJ
11/16/22