



Prep Standard - Chemical Standard Summary

Order ID : P1187

Test : PCB

Prepbatch ID : PB158601,

Sequence ID/Qc Batch ID: PR012724,

Standard ID :

EP2416,EP2424,EP2439,PP22777,PP22778,PP22779,PP22780,PP22781,PP22782,PP22783,PP22787,PP22788,PP22789,PP22790,PP22791,PP22792,PP22793,PP22794,PP22795,PP22796,PP22797,PP22798,PP22799,PP22800,PP22801,PP22802,PP22803,PP22804,PP22805,PP22806,PP22807,PP22808,PP22809,PP22810,PP22811,PP22812,PP22813,PP22814,PP22815,PP22816,PP22817,PP22818,PP22819,PP22820,PP22821,PP22822,PP22823,PP22824,PP22825,PP22826,PP22827,PP22828,PP22829,PP22830,PP22831,PP22832,PP22833,PP22834,PP22835,PP22836,PP22837,PP22992,PP23027/28/29/30,PP23031/32/33/34,

Chemical ID :

E2865,E3657,E3661,E3662,E3668,E3674,E3677,M5673,P10481,P10498,P11050,P11055,P11495,P11505,P11510,P11517,P11519,P11579,P11585,P11588,P11595,P11745,P11747,P12206,P12696,P12701,W2606,

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
314	1.1 H2SO4 SOLN	EP2416	11/29/2023	05/29/2024	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 11/29/2023
<u>FROM</u> 1000.00000ml of M5673 + 1000.00000ml of W2606 = Final Quantity: 2000.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
230	1:1ACETONE/HEXANE	EP2424	12/18/2023	06/08/2024	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 12/18/2023
<u>FROM</u> 8000.00000ml of E3661 + 8000.00000ml of E3668 = Final Quantity: 8000.000 ml								

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1874	10 N SODIUM HYDROXIDE SOLN	EP2439	01/19/2024	06/03/2024	Rajesh Parikh	Extraction_SC ALE_2 (EX-SC-2)	None	RUPESHKUMAR SHAH 01/19/2024
<u>FROM</u>	1000.00000ml of W2606 + 400.00000gram of E3657 = Final Quantity: 1000.000 ml							

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84	Pest/PCB Surrogate Stock 20 PPM	PP22777	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 1.00000ml of P11745 + 9.00000ml of E3662 = Final Quantity: 10.000 ml								

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404	AR1660 100 PPM Stock Solution 2nd Source	PP22778	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 1.00000ml of P12206 + 9.00000ml of E3661 = Final Quantity: 10.000 ml								

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202	AR1660 1000/100 ppb working solution 1st source	PP22779	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P10481 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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203	AR1660 750 PPB STD	PP22780	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22779 = Final Quantity: 1.000 ml								

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204	AR1660 500 PPB STD	PP22781	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22779 = Final Quantity: 1.000 ml								

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205	AR1660 250 PPB STD	PP22782	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel
12/08/2023								
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22779 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
206	AR1660 50 PPB STD	PP22783	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22781 = Final Quantity: 1.000 ml								

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213	AR1221 1000 PPB WORKING SOLUTION	PP22787	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P11579 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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1079	AR1221 750 PPB STD	PP22788	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22787 = Final Quantity: 1.000 ml								

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222	AR1221 500 PPB STD	PP22789	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22787 = Final Quantity: 1.000 ml								

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1080	AR1221 250 PPB STD	PP22790	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22787 = Final Quantity: 1.000 ml								

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1081	AR1221 50 PPB STD	PP22791	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22789 = Final Quantity: 1.000 ml								

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214	AR1232 1000 PPB WORKING SOLUTION	PP22792	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P11585 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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1063	AR1232 750 PPB STD	PP22793	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22792 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
223	AR1232 500 PPB STD	PP22794	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22792 = Final Quantity: 1.000 ml								

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1064	AR1232 250 PPB STD	PP22795	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22792 = Final Quantity: 1.000 ml								

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1065	AR1232 50 PPB STD	PP22796	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22794 = Final Quantity: 1.000 ml								

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215	AR1242 1000 PPB WORKING STD	PP22797	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P11050 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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1067	AR1242 750 PPB STD	PP22798	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22797 = Final Quantity: 1.000 ml								

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224	AR1242 500 PPB STD	PP22799	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22797 = Final Quantity: 1.000 ml								

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1068	AR1242 250 PPB STD	PP22800	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22797 = Final Quantity: 1.000 ml								

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1069	AR1242 50 PPB STD	PP22801	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u>	0.90000ml of E3662 + 0.10000ml of PP22799 = Final Quantity: 1.000 ml							

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216	AR1248 1000 PPB WORKING STD	PP22802	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P11055 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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1075	AR1248 750 PPB STD	PP22803	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22802 = Final Quantity: 1.000 ml								

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225	AR1248 500 PPB STD	PP22804	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22802 = Final Quantity: 1.000 ml								

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1076	AR1248 250 PPB STD	PP22805	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22802 = Final Quantity: 1.000 ml								

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1077	AR1248 50 PPB STD	PP22806	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22804 = Final Quantity: 1.000 ml								

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217	AR1254 1000 PPB WORKING STD	PP22807	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P11588 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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1071	AR1254 750 PPB STD	PP22808	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22807 = Final Quantity: 1.000 ml								

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226	AR1254 500 PPB STD	PP22809	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22807 = Final Quantity: 1.000 ml								

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1072	AR1254 250 PPB STD	PP22810	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22807 = Final Quantity: 1.000 ml								

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1073	AR1254 50 PPB STD	PP22811	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22809 = Final Quantity: 1.000 ml								

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1529	AR1262 1000 PPB Working Solution	PP22812	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P10498 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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3753	AR1262 750 PPB STD	PP22813	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22812 = Final Quantity: 1.000 ml								

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1530	AR1262 500 PPB STD	PP22814	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22812 = Final Quantity: 1.000 ml								

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3754	AR1262 250 PPB STD	PP22815	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22812 = Final Quantity: 1.000 ml								

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3755	AR1262 50 PPB STD	PP22816	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22814 = Final Quantity: 1.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1532	AR1268 1000 PPB Working Solution	PP22817	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.10000ml of P11595 + 99.40000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3820	AR1268 750 PPB STD	PP22818	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.25000ml of E3662 + 0.75000ml of PP22817 = Final Quantity: 1.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1533	AR1268 500 PPB STD	PP22819	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22817 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3821	AR1268 250 PPB STD	PP22820	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.75000ml of E3662 + 0.25000ml of PP22817 = Final Quantity: 1.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3822	AR1268 50 PPB STD	PP22821	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.90000ml of E3662 + 0.10000ml of PP22819 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
405	AR1660 1000/100 PPB ICV STD	PP22822	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 98.50000ml of E3662 + 0.50000ml of PP22777 + 1.00000ml of PP22778 = Final Quantity: 100.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
406	AR1660 500 PPB ICV	PP22823	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22822 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3789	AR1221 1000 PPB WORKING SOL.2ND SOURCE(AGILENT)	PP22824	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u>	1.00000ml of P11495 + 98.50000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml							

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3790	AR1221 500 PPB ICV(AGILENT)	PP22825	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22824 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1887	AR1232 1000 PPB Working Sol. 2nd Source	PP22826	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 1.00000ml of P12696 + 98.50000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1888	AR1232 500 PPB ICV	PP22827	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023

FROM	0.50000ml of E3662 + 0.50000ml of PP22826 = Final Quantity: 1.000 ml
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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1889	AR1242 1000 PPB Working Sol. 2nd Source	PP22828	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023

FROM	
1.00000ml of P11505 + 98.50000ml of E3662 + 0.50000ml of PP22777	= Final Quantity: 100.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1891	AR1242 500 PPB ICV	PP22829	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023

FROM	0.50000ml of E3662 + 0.50000ml of PP22828 = Final Quantity: 1.000 ml
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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1890	AR1248 1000 PPB Working Sol. 2nd Source	PP22830	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023

FROM	
1.00000ml of P11510 + 98.50000ml of E3662 + 0.50000ml of PP22777	= Final Quantity: 100.000 ml

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1892	AR1248 500 PPB ICV	PP22831	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22830 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1893	AR1254 1000 PPB Working Sol. 2nd Source	PP22832	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u>	1.00000ml of P11517 + 98.50000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml							

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
1894	AR1254 500 PPB ICV	PP22833	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22832 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3757	AR1262 1000 PPB Working Solution second source	PP22834	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 1.00000ml of P12701 + 98.50000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3758	AR1262 500 PPB STD ICV	PP22835	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22834 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3817	AR1268 1000 ppb Working Soln. 2nd source	PP22836	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 1.00000ml of P11519 + 98.50000ml of E3662 + 0.50000ml of PP22777 = Final Quantity: 100.000 ml								

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<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
3823	AR1268 500 PPB STD ICV	PP22837	12/08/2023	06/08/2024	Ankita Jodhani	None	None	Yogesh Patel 12/08/2023
<u>FROM</u> 0.50000ml of E3662 + 0.50000ml of PP22836 = Final Quantity: 1.000 ml								

<u>Recipe ID</u>	<u>NAME</u>	<u>NO.</u>	<u>Prep Date</u>	<u>Expiration Date</u>	<u>Prepared By</u>	<u>ScaleID</u>	<u>PipetteID</u>	<u>Supervised By</u>
465	200 PPB Pest/PCB Surrogate Spike	PP22992	01/05/2024	07/03/2024	Abdul Mirza	None	None	Ankita Jodhani 01/08/2024
<u>FROM</u>	1.00000ml of P11747 + 999.00000ml of E3674 = Final Quantity: 1000.000 ml							

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3382-05 / Sand, Purified (cs/4x2.5kg)	0000243821	12/31/2024	04/30/2020 / RAJESH	04/28/2020 / RAJESH	E2865

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4	23B1556310	06/03/2024	12/04/2023 / Rajesh	12/01/2023 / Rajesh	E3657

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)	23H1462005	06/23/2024	12/08/2023 / Rajesh	12/06/2023 / Rajesh	E3661

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)	23G1262009	06/08/2024	12/08/2023 / Rajesh	12/06/2023 / Rajesh	E3662

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)	23G1262009	06/14/2024	12/14/2023 / Rajesh	12/14/2023 / Rajesh	E3668

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)	23H1462005	07/03/2024	01/03/2024 / Rajesh	01/03/2024 / Rajesh	E3674

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)	23G1262009	07/22/2024	01/22/2024 / Rajesh	01/16/2024 / Rajesh	E3677

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)	23D2462010	03/20/2028	09/21/2023 / mohan	09/05/2023 / mohan	M5673

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	06/08/2024	12/08/2023 / Ankita	03/19/2021 / Abdul	P10481

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	06/08/2024	12/08/2023 / Ankita	03/19/2021 / Ankita	P10498

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	06/08/2024	12/08/2023 / Ankita	09/03/2021 / Abdul	P11050

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	06/08/2024	12/08/2023 / Ankita	09/03/2021 / Abdul	P11055

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-292-1 / Aroclor 1221	0006535333	06/08/2024	12/08/2023 / Ankita	02/21/2022 / Ankita	P11495

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-312-1 / Aroclor 1242	0006665550	06/08/2024	12/08/2023 / Ankita	02/21/2022 / Ankita	P11505

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-342-1 / Aroclor 1248	0006626997	06/08/2024	12/08/2023 / Ankita	02/21/2022 / Ankita	P11510

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	06/08/2024	12/08/2023 / Ankita	02/21/2022 / Ankita	P11517

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-382-1 / Aroclor 1268	0006587800	06/08/2024	12/08/2023 / Ankita	02/21/2022 / Ankita	P11519

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	06/08/2024	12/08/2023 / Ankita	03/18/2022 / Abdul	P11579

CHEMICAL RECEIPT LOG BOOK

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	06/08/2024	12/08/2023 / Ankita	03/18/2022 / Abdul	P11585

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	A0175403	06/08/2024	12/08/2023 / Ankita	03/18/2022 / Abdul	P11588

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	06/08/2024	12/08/2023 / Ankita	03/18/2022 / Abdul	P11595

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	06/08/2024	12/08/2023 / Ankita	05/27/2022 / Sohil	P11745

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	07/05/2024	01/05/2024 / Abdul	05/27/2022 / Sohil	P11747

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	20064 / Aroclor 1016/1260	033121	06/08/2024	12/08/2023 / Ankita	11/16/2022 / Ankita	P12206



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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc	91867 / Aroclor 1232 100 ug/mL	020823	06/08/2024	12/08/2023 / Ankita	08/07/2023 / Ankita	P12696

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc	x9166 / Aroclor 1262 100 ug/mL	060523	06/08/2024	12/08/2023 / Ankita	08/07/2023 / Ankita	P12701

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	10/24/2024	10/24/2019 / apatel	10/24/2019 / apatel	W2606

Sand
Purified
Washed and Ignited



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

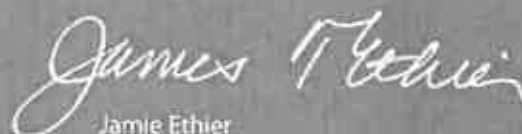
Certificate of Analysis

Test	Specification	Result
Substances Soluble in HCl	$\leq 0.16\%$	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


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



Certificate of Analysis

Sodium Hydroxide (Pellets)

Material: 0583
Grade: ACS GRADE
Batch Number: 23B1556310

Chemical Formula: NaOH
Molecular Weight: 40
CAS #: 1310-73-2
Appearance:

Manufacture Date: 12/14/2022
Expiration Date: 12/31/2025

Storage: Room Temperature

Pellets

TEST	SPECIFICATION	ANALYSIS	DISPOSITION
Calcium	$\leq 0.005 \%$	$< 0.005 \%$	PASS
Chloride	$\leq 0.005 \%$	0.002 %	PASS
Heavy Metals	$\leq 0.002 \%$	$< 0.002 \%$	PASS
Iron	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Magnesium	$\leq 0.002 \%$	$< 0.002 \%$	PASS
Mercury	$\leq 0.1 \text{ ppm}$	$< 0.1 \text{ ppm}$	PASS
Nickel	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Nitrogen Compounds	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Phosphate	$\leq 0.001 \%$	$< 0.001 \%$	PASS
Potassium	$\leq 0.02 \%$	$< 0.02 \%$	PASS
Purity	$\geq 97.0 \%$	99.2 %	PASS
Sodium Carbonate	$\leq 1.0 \%$	0.5 %	PASS
Sulfate	$\leq 0.003 \%$	$< 0.003 \%$	PASS

Internal ID #: 710

Signature

We certify that this batch conforms to the specifications listed.

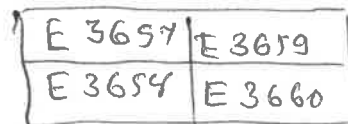
This document has been electronically produced and is valid without a signature.

Leona Edwardson, Quality Control Sr. Manager - Solon
VWR Chemicals, LLC.
28600 Fountain Parkway, Solon OH 44139 USA

Additional Information

Analysis may have been rounded to significant digits in specification limits.

Product meets analytical specifications of the grades listed.



Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis



Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

Recd by RP on 12/6/23

E 3661

Ken Koehnlein
Sr. Manager, Quality Assurance

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

Avantor Performance Materials, LLC

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

Page 1 of 1

Material No.: 9262-03
Batch No.: 23G1262009
Manufactured Date: 2023-06-01
Expiration Date: 2024-08-30
Revision No.: 0

Certificate of Analysis

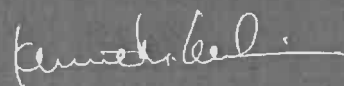
Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	≤ 5	3
Assay (Total Saturated C ₆ Isomers) (by GC, corrected for water)	≥ 99.5 %	99.6 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	98 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Darkened by H ₂ SO 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 12/6/23

E 3662



Ken Koehnlein
Sr. Manager, Quality Assurance

Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

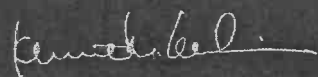
Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

E 3668

Recd by RL On 12/14/23



Ken Koehnlein
Sr. Manager, Quality Assurance

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

Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700
Page 1 of 1

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

 **avantor™**



Material No.: 9254-03
Batch No.: 23H1462005
Manufactured Date: 2023-07-26
Expiration Date: 2026-07-25
Revision No.: 0

Certificate of Analysis

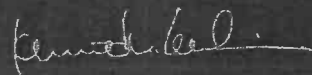
Test	Specification	Result
Assay ((CH ₃) ₂ CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.6	< 0.1
Water (H ₂ O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1

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

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

Recd. by RP on 1/3/24

E 3674



Ken Koehnlein
Sr. Manager, Quality Assurance

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



Material No.: 9262-03
Batch No.: 23G1262009
Manufactured Date: 2023-06-01
Expiration Date: 2024-08-30
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	3
Assay (Total Saturated C ₆ Isomers) (by GC, corrected for water)	≥ 99.5 %	99.6 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	98 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Darkened by H ₂ SO 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 1/16/24

E 3677

Ken Koehnlein
Sr. Manager, Quality Assurance

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

Avantor Performance Materials, LLC

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

Page 1 of 1

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

 **avantor**™



Material No.: 9673-33
Batch No.: 23D2462010
Manufactured Date: 2023-03-22
Retest Date: 2028-03-20
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
ACS – Assay (H ₂ SO ₄)	95.0 – 98.0 %	96.1 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO ₂)	≤ 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	< 5.0 ppb
Arsenic and Antimony (as As)	≤ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	8.5 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	0.5 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	1.3 ppb
Trace Impurities – Lead (Pb)	≤ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.8 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	< 0.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	31.5 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

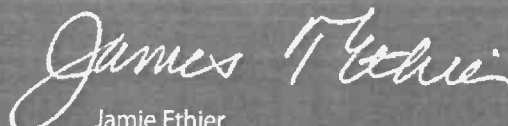


Material No.: 9673-33
Batch No.: 23D2462010

Test	Specification	Result
Trace Impurities – Sodium (Na)	≤ 500.0 ppb	5.4 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	0.4 ppb

For Laboratory, Research, or Manufacturing Use

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


Jamie Ethier
Vice President Global Quality



CERTIFIED REFERENCE MATERIAL

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

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

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 CAS # 12674-11-2 (Lot 04) Purity ----%	1,007.0 µg/mL	+/- 5.8683 µg/mL Gravimetric +/- 31.9082 µg/mL Unstressed +/- 41.6868 µg/mL Stressed
2	Aroclor 1260 CAS # 11096-82-5 (Lot 07) Purity ----%	1,008.0 µg/mL	+/- 5.8741 µg/mL Gravimetric +/- 31.9399 µg/mL Unstressed +/- 41.7282 µg/mL Stressed

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

P 10476
↓
P 10480
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:

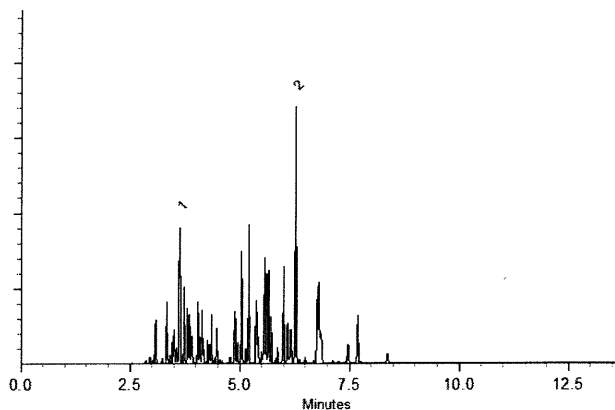
250°C

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



CERTIFIED REFERENCE MATERIAL

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

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 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
↓
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:

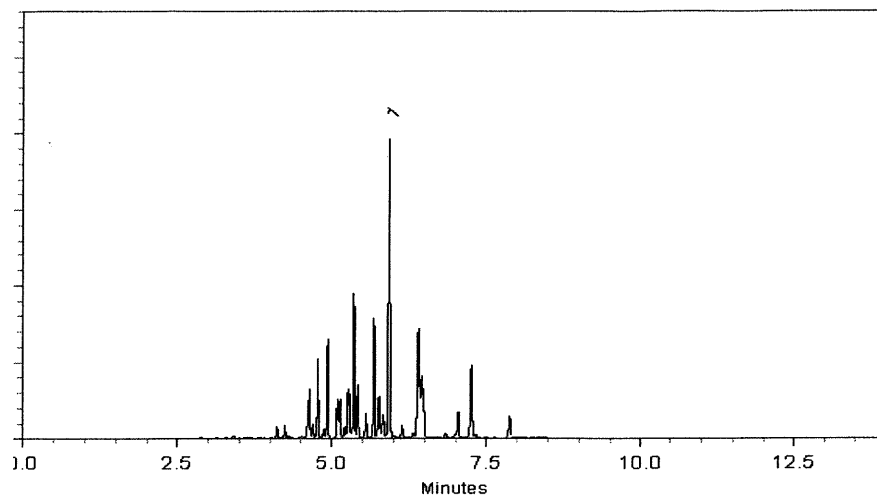
250°C

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
Sam Moodler - Operations Tech I

Date Mixed: 03-Jan-2021

Balance: B707717271

Marlene Cowan
Marlene Cowan - Operations Tech I

Date Passed: 05-Jan-2021

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



CERTIFIED REFERENCE MATERIAL

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

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

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

P11046
To
P11050
AR
09/9/2021

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:

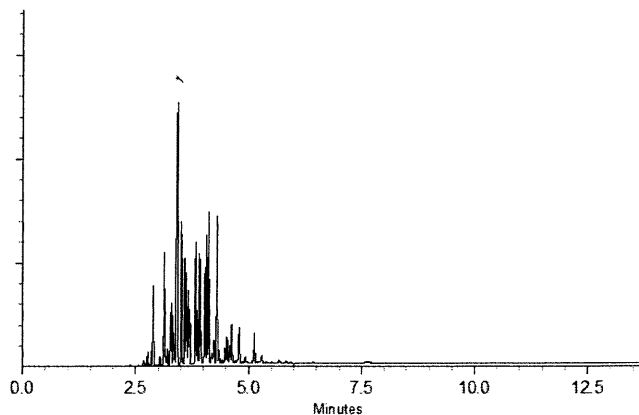
250°C

Det. Temp:

300°C

Det. Type:

ECD

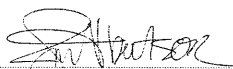


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


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
↓
P11050
←
AR
09/9/2021



CERTIFIED REFERENCE MATERIAL

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

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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No.: 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
09/19/2021

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:

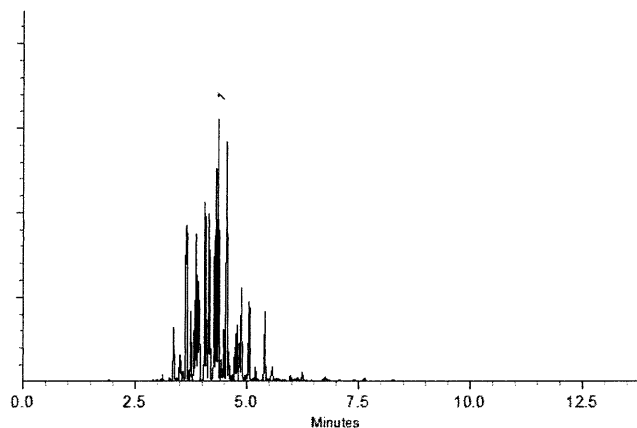
250°C

Det. Temp:

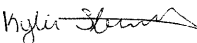
300°C

Det. Type:

ECD

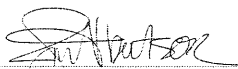


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.


Kyle Struble - Operations Technician I

Date Mixed: 13-Jul-2020

Balance: 1128360905


Justine Alberson - 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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AR
9/7/2021



Certificate of Analysis

P11493

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P11494

17
02/21/22

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/NCCL 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:

Monica Bourgeois
QMS Representative



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

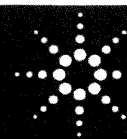
Page: 1 of 1

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



ISO 17025 Cert
No. AT-1937

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

Component Name	CERTIFIED VALUES			CAS#	Analyte Lot
	Concentration	Expanded Uncertainty			
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.

P11503
↓
P11507

AJ
02/21/22

ISO 17034



Agilent

Trusted Answers

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 Cert
No. AR-1936

RM was produced in accordance with the TUV/SUD registered ISO 9001:2015
Quality Management System. Cert# 951215321

Page: 2 of 2

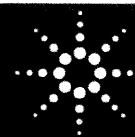
www.agilent.com/quality/

CSD-QA-015.1



ISO 17025
Cert No. AT-

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

Component Name	CERTIFIED VALUES		CAS#	Analyte Lot
	Concentration	Expanded Uncertainty		
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.

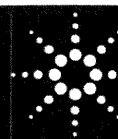
P11508

↓
P11512

AJ

2/21/22

ISO 17034



Agilent

Trusted Answers

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 Cert
No. AR-1936

RM was produced in accordance with the TUV/SUD registered ISO 9001:2015
Quality Management System. Cert# 951215321

Page: 2 of 2

www.agilent.com/quality/

CSD-QA-015.1



ISO 17025 Cert
No. AT-1937



Certificate of Analysis

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/NC SL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.



ISO 9001
Registered
TUV USA, Inc.

John Russo
President

Monica Bourgeois
Director of QA/RA



Certificate of Analysis

P11518
↓
P11522
AJ
02/21/22

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.

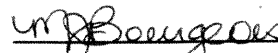
Expiration of Certification:

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:


Monica Bourgeois
QMS Representative



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
Page: 1 of 1

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



ISO 17025 Cert
No. AT-1937



CERTIFIED REFERENCE MATERIAL

110 Benner Circle
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Fax: (814)353-1309

www.restek.com

Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

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
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P 11582 / (S)

AR
04/30/22

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

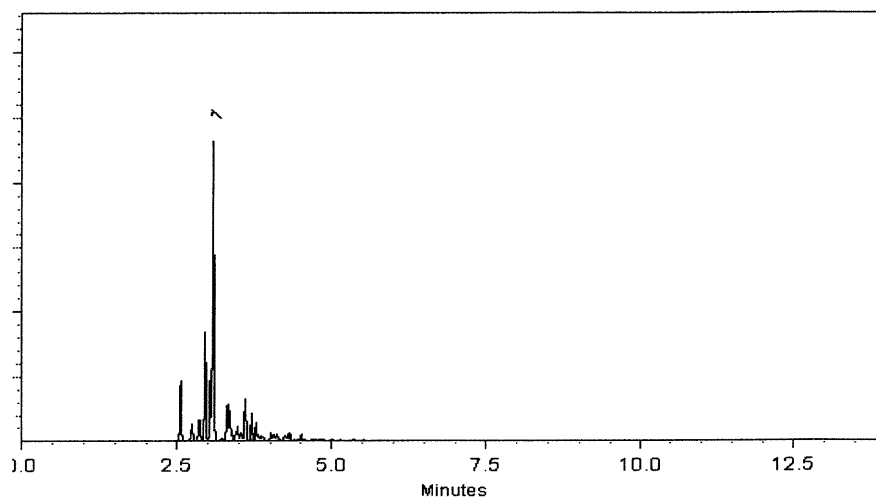
Carrier Gas:
helium-constant pressure 20 psi.

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
Sam Moodler - Operations Tech I

Date Mixed: 16-Aug-2021 Balance: B442140311

Marlene Cowan
Marlene Cowan - Operations Tech I

Date Passed: 18-Aug-2021

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

P11578
↓
P11582 / (S)

AR
04/30/22



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 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
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P11587 / (S)

AR
04/30/22

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

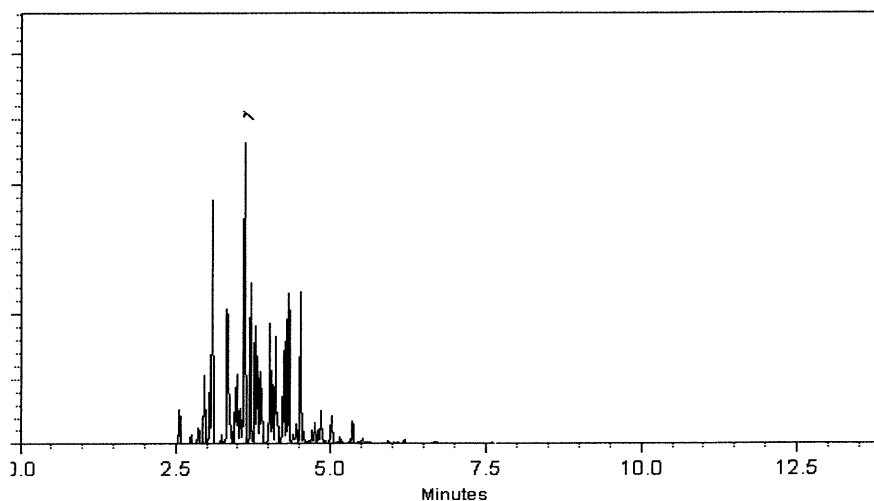
Carrier Gas:
helium-constant pressure 20 psi.

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
Sam Moodler - Operations Tech I

Date Mixed: 13-Jun-2021

Balance: B442140311

Alexis Shelow
Alexis Shelow - Operations Tech I

Date Passed: 16-Jun-2021

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

P11583
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P11587

AR
04/30/22



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 32011 Lot No.: A0175403
Description : Aroclor® 1254 Standard
Aroclor® 1254 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 1254 CAS # 11097-69-1 (Lot 124-191-B) Purity ----%	1,000.7 µg/mL	+/- 5.9437 µg/mL Gravimetric +/- 31.7284 µg/mL Unstressed +/- 41.4406 µg/mL Stressed

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

P11588
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P11592 / (S)

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:

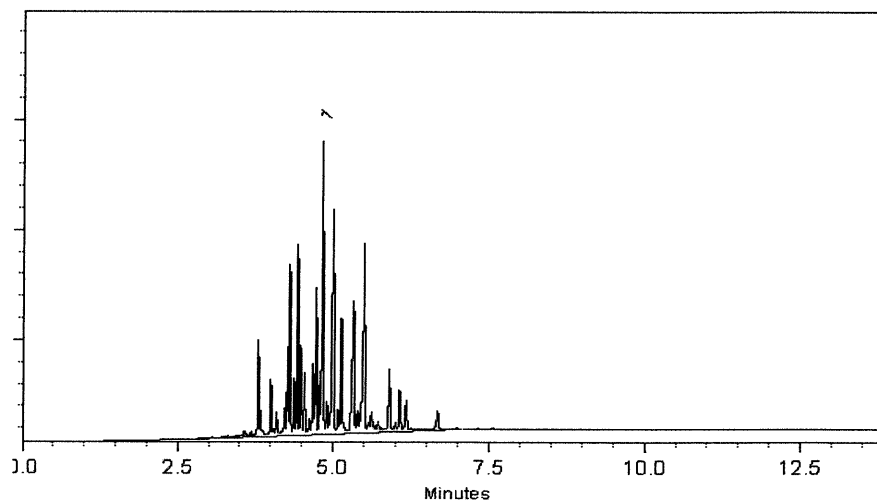
250°C

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.

Cathleen Soltis

Cathleen Soltis - Mix Technician

Date Mixed: 15-Aug-2021

Balance: 1128360905

Alexis Shelow

Alexis Shelow - Operations Tech I

Date Passed: 17-Aug-2021

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

P11588
↓
P11592 / (5)

AR
04/30/22



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Certificate of Analysis



FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 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 CAS # 11100-14-4 (Lot 10947000) Purity ----%	1,001.4 µg/mL	+/- 5.9480 µg/mL Gravimetric +/- 31.7516 µg/mL Unstressed +/- 41.4710 µg/mL Stressed

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

P 11593
↓
P 11597
⑤

UAR
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:

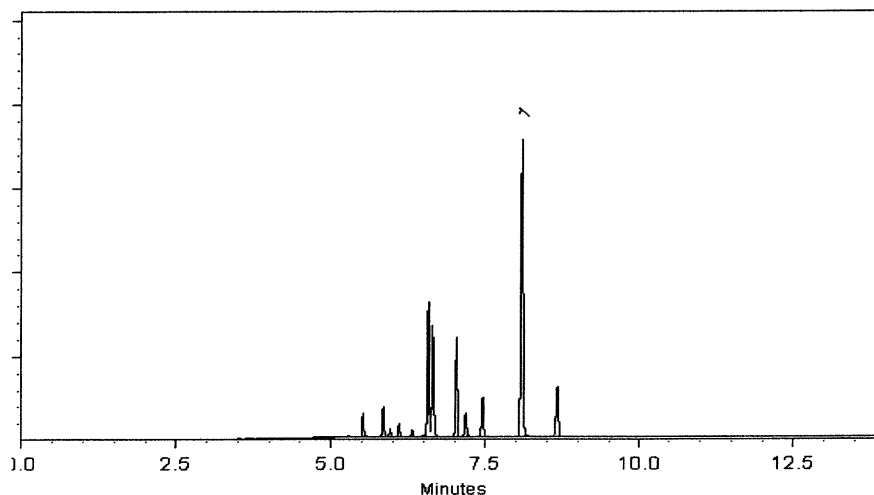
250°C

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 S. Riglin
Penelope Riglin - Operations Tech I

Date Mixed: 14-Feb-2022

Balance: 1128360905

Clara Windle
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
[Signature]
04/30/2022



CERTIFIED REFERENCE MATERIAL

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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:

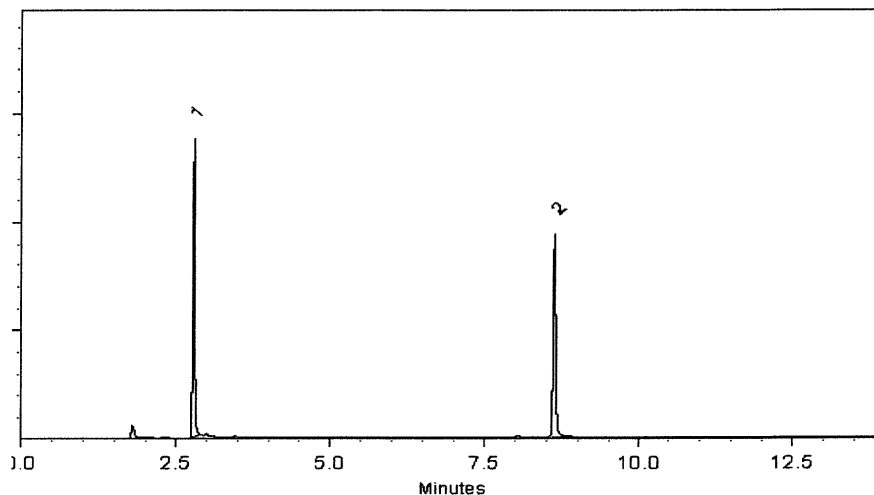
250°C

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:

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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



CERTIFIED REFERENCE MATERIAL

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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 CAS # 877-09-8 (Lot 0052481) Purity 98%	200.7 µg/mL	+/- 1.1840 µg/mL Gravimetric +/- 6.3622 µg/mL Unstressed +/- 8.3106 µg/mL Stressed
2	Decachlorobiphenyl (BZ# 209) CAS # 2051-24-3 (Lot 30679) Purity 99%	200.8 µg/mL	+/- 1.1845 µg/mL Gravimetric +/- 6.3653 µg/mL Unstressed +/- 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:

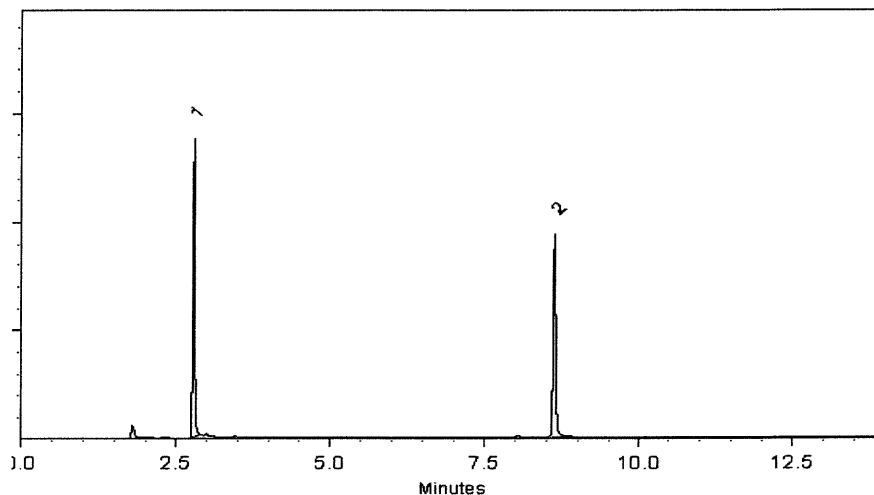
250°C

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:

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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



CERTIFIED WEIGHT REPORT

Part Number:
Lot Number:
Description:

20064
033121
CLP PCB'S - Aroclor Mix
Aroclors 1016 & 1260
033131
Ambient (20 °C)
1000
6UTB

Solvent(s):
Hexane

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

Expiration Date:
Recommended Storage:
Nominal Concentration (µg/mL):
NIST Test ID#:

5E-05 Balance Uncertainty
0.058 Flask Uncertainty

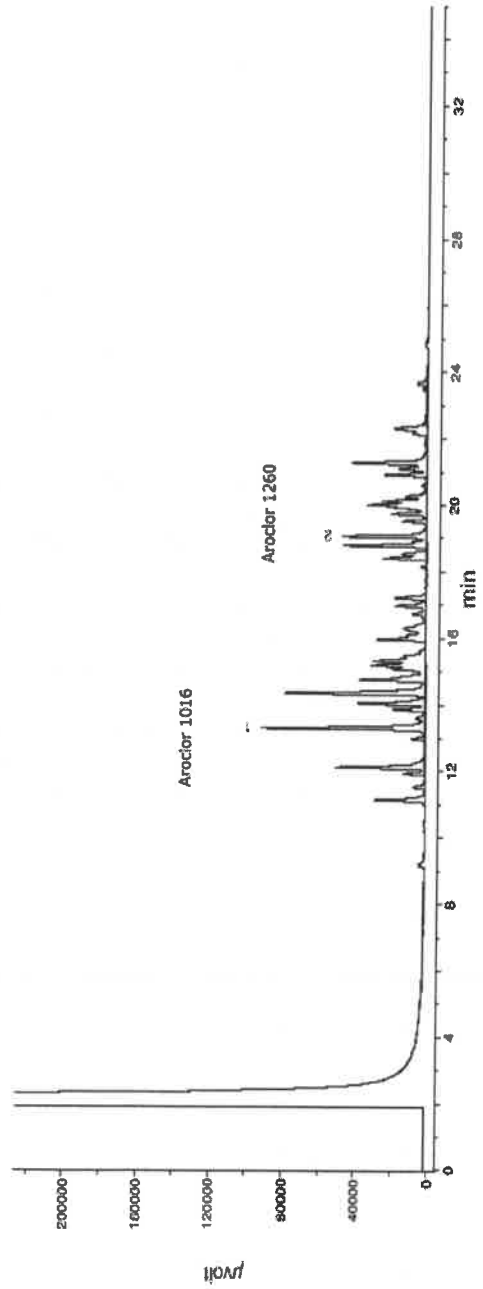
Weight(s) shown below were combined and diluted to (mL):

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Expanded Uncertainty	Actual Weight (g)	Actual Conc (µg/mL)	Actual Weight (g)	Actual Conc (µg/mL)	OSHA PEL (TWA)	LD50
1. Aroclor 1016	15	020491JC	1000	100	0.2	0.20007	1000.9	0.20025	1000.9	12674-11-2	N/A
2. Aroclor 1260	21	020491JC	1000	100	0.2	0.20007	1001.4	0.20035	1001.4	11096-82-5	0.5mg/m3

* 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 certified (+/-) 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

GCS-M1 Analysis by Melissa Stortier
Column ID SPB-608 30 meter X 0.53mm X 5µm 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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CERTIFIED WEIGHT REPORT

Part Number: **91867**
 Lot Number: **020823**
 Description: **WP 037 - Aroclor 1232**
PCB Technical Mixture
 Expiration Date: **020833**
 Recommended Storage: **Ambient (20 °C)**
 Nominal Concentration (µg/mL): **100**
 NIST Test ID#: **6UTB**

Solvent(
Aceton

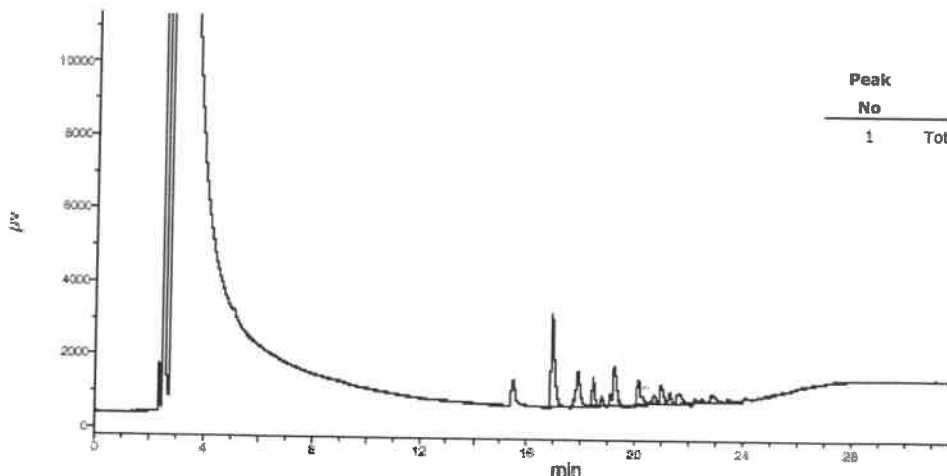
Weight(s) shown below were combined and diluted to (mL): **100.0**
 5E-05 Balance Uncertainty
 0.057 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight (g)
1. Aroclor 1232	17	45-6A	100	100	0.5	0.01000

- 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 certified (+/-) 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 Measure 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 X 5µm 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





CERTIFIED WEIGHT REPORT

Part Number: X9166
Lot Number: 060523
Description: Aroclor 1262

Solvent(s):
Methanol

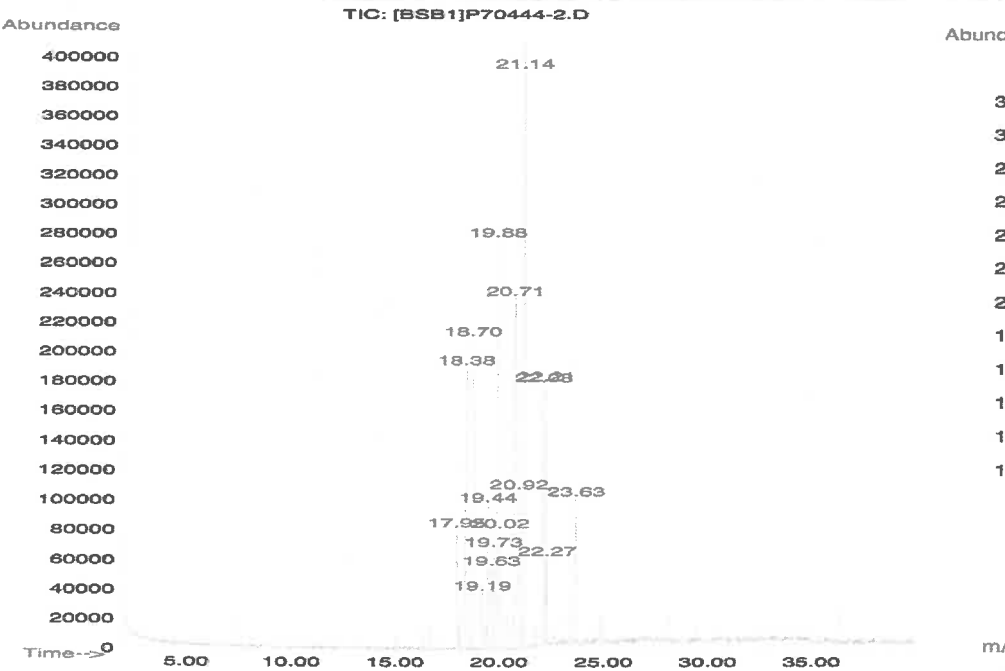
Appendix IX Compound

Expiration Date: 060533
Recommended Storage: Ambient (20 °C)
Nominal Concentration (µg/mL): 100
NIST Test ID#: 6UTB

Volume(s) shown below were combined and diluted to (mL): 20.0 0.002
5E-05 Balance Uncertainty
Flask Uncertainty

Compound	Part Number	Lot Number	Dil. Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Co
1. Aroclor 1262	70444	080322	0.10	2.00	0.017	

Method GC7MSD-7.M: Column:(30m X 0.25mm ID X 0.25µm film thickn min.), Rate = 8°C/min., Injector B= 200°C, Detector B = 290°C.



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