

## Prep Standard - Chemical Standard Summary

**Order ID :** Q1860

**Test :** PCB

**Prepbatch ID :** PB167721,PB167737,

**Sequence ID/Qc Batch ID:** PO042425,PO042525,PO042825,PO042925,PP042425,PP042825,PP042925,PP043025,

**Standard ID :**

EP2565,EP2601,EP2604,PP24329,PP24330,PP24331,PP24332,PP24333,PP24334,PP24335,PP24336,PP24337,PP24338,PP24339,PP24340,PP24341,PP24342,PP24343,PP24344,PP24345,PP24346,PP24347,PP24348,PP24349,PP24350,PP24351,PP24352,PP24353,PP24354,PP24355,PP24356,PP24357,PP24358,PP24359,PP24360,PP24361,PP24362,PP24363,PP24364,PP24365,PP24366,PP24367,PP24368,PP24369,PP24370,PP24371,PP24372,PP24373,PP24374,PP24375,PP24376,PP24377,PP24378,PP24379,PP24380,PP24381,PP24382,PP24384,PP24385,PP24386,PP24387,PP24460,PP24461,

**Chemical ID :**

E2865,E3551,E3804,E3877,E3916,E3917,E3928,M5173,P11522,P12699,P12702,P12931,P12936,P12949,P12955,P12957,P13355,P13356,P13373,P13381,P13589,P13591,P13697,P13702,P13830,P13878,P13883,W3112,W3177,

## Extractions STANDARD PREPARATION LOG

<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	<a href="#">EP2565</a>	11/20/2024	05/20/2025	Rajesh Parikh	None	None	RUPESHKUMAR SHAH 11/20/2024

**FROM** 1000.00000ml of M5173 + 1000.00000ml of W3112 = 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	<a href="#">EP2601</a>	04/07/2025	10/03/2025	Rajesh Parikh	None	None	Riteshkumar Patel 04/07/2025

**FROM** 8000.00000ml of E3916 + 8000.00000ml of E3917 = Final Quantity: 8000.000 ml

## Extractions STANDARD PREPARATION LOG

<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>
3923	Baked Sodium Sulfate	<a href="#">EP2604</a>	04/16/2025	07/01/2025	RUPESHKUMAR SHAH	Extraction_SC ALE_2 (EX-SC-2)	None	Riteshkumar Patel  04/16/2025

**FROM** 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

<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>
84	Pest/PCB Surrogate Stock 20 PPM	<a href="#">PP24329</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza  04/03/2025

**FROM** 1.00000ml of P13356 + 9.00000ml of W3177 = Final Quantity: 10.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
202	AR1660 1000/100 ppb working solution 1st source	<a href="#">PP24330</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P13697 + 99.40000ml of W3177 + 0.50000ml of PP24329 = 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>
203	AR1660 750 PPB STD	<a href="#">PP24331</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24330 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
204	AR1660 500 PPB STD	<a href="#">PP24332</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24330 = 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>
205	AR1660 250 PPB STD	<a href="#">PP24333</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24330 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24334</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24332 = 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>
213	AR1221 1000 PPB WORKING SOLUTION	<a href="#">PP24335</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P13702 + 99.40000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1079	AR1221 750 PPB STD	<a href="#">PP24336</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24335 = 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>
222	AR1221 500 PPB STD	<a href="#">PP24337</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24335 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1080	AR1221 250 PPB STD	<a href="#">PP24338</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24335 = 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>
1081	AR1221 50 PPB STD	<a href="#">PP24339</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24337 = Final Quantity: 1.000 ml



## Pest/Pcb STANDARD PREPARATION LOG

<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>
214	AR1232 1000 PPB WORKING SOLUTION	<a href="#">PP24340</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P13878 + 99.40000ml of W3177 + 0.50000ml of PP24329 = 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>
1063	AR1232 750 PPB STD	<a href="#">PP24341</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24340 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24342</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24340 = 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>
1064	AR1232 250 PPB STD	<a href="#">PP24343</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24340 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1065	AR1232 50 PPB STD	<a href="#">PP24344</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24342 = 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>
215	AR1242 1000 PPB WORKING STD	<a href="#">PP24345</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P12931 + 99.40000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1067	AR1242 750 PPB STD	<a href="#">PP24346</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.75000ml of PP24345 = 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>
224	AR1242 500 PPB STD	<a href="#">PP24347</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24345 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1068	AR1242 250 PPB STD	<a href="#">PP24348</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24345 = 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>
1069	AR1242 50 PPB STD	<a href="#">PP24349</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24347 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
216	AR1248 1000 PPB WORKING STD	<a href="#">PP24350</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P12936 + 99.40000ml of W3177 + 0.50000ml of PP24329 = 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>
1075	AR1248 750 PPB STD	<a href="#">PP24351</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24350 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
225	AR1248 500 PPB STD	<a href="#">PP24352</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24350 = 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>
1076	AR1248 250 PPB STD	<a href="#">PP24353</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24350 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1077	AR1248 50 PPB STD	<a href="#">PP24354</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24352 = 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>
217	AR1254 1000 PPB WORKING STD	<a href="#">PP24355</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P13830 + 99.40000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml



## Pest/Pcb STANDARD PREPARATION LOG

<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>
1071	AR1254 750 PPB STD	<a href="#">PP24356</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24355 = 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>
226	AR1254 500 PPB STD	<a href="#">PP24357</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24355 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1072	AR1254 250 PPB STD	<a href="#">PP24358</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24355 = 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>
1073	AR1254 50 PPB STD	<a href="#">PP24359</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24357 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1529	AR1262 1000 PPB Working Solution	<a href="#">PP24360</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P13883 + 99.40000ml of W3177 + 0.50000ml of PP24329 = 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>
3753	AR1262 750 PPB STD	<a href="#">PP24361</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24360 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1530	AR1262 500 PPB STD	<a href="#">PP24362</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24360 = 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>
3754	AR1262 250 PPB STD	<a href="#">PP24363</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24360 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
3755	AR1262 50 PPB STD	<a href="#">PP24364</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24362 = 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>
1532	AR1268 1000 PPB Working Solution	<a href="#">PP24365</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.10000ml of P13381 + 99.40000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24366</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.25000ml of W3177 + 0.75000ml of PP24365 = 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>
1533	AR1268 500 PPB STD	<a href="#">PP24367</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24365 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24368</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.75000ml of W3177 + 0.25000ml of PP24365 = 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>
3822	AR1268 50 PPB STD	<a href="#">PP24369</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.90000ml of W3177 + 0.10000ml of PP24367 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
404	AR1660 100 PPM Stock Solution 2nd Source	<a href="#">PP24370</a>	03/18/2025	09/18/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P12949 + 9.00000ml of E3804 = Final Quantity: 10.000 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	<a href="#">PP24371</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 98.50000ml of W3177 + 0.50000ml of PP24329 + 1.00000ml of PP24370 = Final Quantity: 100.000 ml



## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24372</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24371 = 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)	<a href="#">PP24373</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P13373 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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>
1886	AR1221 500 PPB ICV	<a href="#">PP24374</a>	03/18/2025	08/12/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of E3877 + 0.50000ml of W3177 = 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	<a href="#">PP24375</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P12699 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24376</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24375 = 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>
1889	AR1242 1000 PPB Working Sol. 2nd Source	<a href="#">PP24377</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P13589 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24378</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24377 = 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>
1890	AR1248 1000 PPB Working Sol. 2nd Source	<a href="#">PP24379</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P13591 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24380</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24379 = 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	<a href="#">PP24381</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P12957 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24382</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24381 = 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	<a href="#">PP24384</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P12702 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24385</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24384 = 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	<a href="#">PP24386</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 1.00000ml of P11522 + 98.50000ml of W3177 + 0.50000ml of PP24329 = Final Quantity: 100.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

<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	<a href="#">PP24387</a>	03/18/2025	08/22/2025	Yogesh Patel	None	None	Abdul Mirza
								04/03/2025

**FROM** 0.50000ml of W3177 + 0.50000ml of PP24386 = 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	<a href="#">PP24460</a>	04/11/2025	10/03/2025	Abdul Mirza	None	None	Yogesh Patel
								04/16/2025

**FROM** 1.00000ml of P13355 + 999.00000ml of E3917 = Final Quantity: 1000.000 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>
3857	5000 PPB PCB SPIKE SOLUTION 2ND SOURCE	<a href="#">PP24461</a>	04/11/2025	10/03/2025	Abdul Mirza	None	None	Yogesh Patel 04/16/2025
<b><u>FROM</u></b> 0.50000ml of P12955 + 99.50000ml of E3917 = Final Quantity: 100.000 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	06/30/2025	04/30/2020 / RAJESH	04/28/2020 / RAJESH	E2865

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	313201	07/01/2025	01/03/2024 / Rajesh	07/20/2023 / Rajesh	E3551

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	9005-05 / Acetone Ultra (cs/4x4L)	24E0761004	11/05/2025	10/01/2024 / Rajesh	09/25/2024 / Rajesh	E3804

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)	243570	08/12/2025	02/12/2025 / Rajesh	02/12/2025 / Rajesh	E3877

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)	243570	10/03/2025	04/03/2025 / Rajesh	03/31/2025 / Rajesh	E3916

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)	24H2762008	10/03/2025	04/03/2025 / Rajesh	03/31/2025 / Rajesh	E3917

## 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)	25C0362005	10/22/2025	04/18/2025 / RUPESH	04/16/2025 / RUPESH	E3928

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)	0000281827	06/02/2025	06/01/2022 /	04/05/2022 / william	M5173

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-382-1 / Aroclor 1268	0006587800	09/18/2025	03/18/2025 / yogesh	02/21/2022 / Ankita	P11522

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	09/18/2025	03/18/2025 / yogesh	08/07/2023 / Ankita	P12699

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	09/18/2025	03/18/2025 / yogesh	08/07/2023 / Ankita	P12702

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	a0203672	09/18/2025	03/18/2025 / yogesh	12/07/2023 / Ankita	P12931

## CHEMICAL RECEIPT LOG BOOK

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	a0202803	09/18/2025	03/18/2025 / yogesh	12/07/2023 / Ankita	P12936

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	20064 / Aroclor 1016/1260	022023	09/18/2025	03/18/2025 / yogesh	12/20/2023 / Yogesh	P12949

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	20064 / Aroclor 1016/1260	022023	10/11/2025	04/11/2025 / Abdul	12/20/2023 / Yogesh	P12955

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	/ Arochlor 1254	121823	04/03/2025	10/03/2024 / Ankita	12/20/2023 / Yogesh	P12957

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	A0206810	10/11/2025	04/11/2025 / Abdul	04/22/2024 / Abdul	P13355

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	A0206810	09/18/2025	03/18/2025 / yogesh	04/22/2024 / Abdul	P13356

## 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	0006783205	09/18/2025	03/18/2025 / yogesh	05/02/2024 / Ankita	P13373

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	A0207475	09/18/2025	03/18/2025 / yogesh	05/03/2024 / Abdul	P13381

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-312-1 / Aroclor 1242	0006665550	09/18/2025	03/18/2025 / yogesh	10/14/2024 / Ankita	P13589

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	PP-342-1 / Aroclor 1248	0006726317	09/18/2025	03/18/2025 / yogesh	10/14/2024 / Ankita	P13591

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	A0210629	09/18/2025	03/18/2025 / yogesh	10/17/2024 / yogesh	P13697

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	A0215270	09/18/2025	03/18/2025 / yogesh	10/17/2024 / yogesh	P13702

## CHEMICAL RECEIPT LOG BOOK

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	A0217391	09/18/2025	03/18/2025 / yogesh	12/09/2024 / Ankita	P13830

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	A0219655	09/18/2025	03/18/2025 / yogesh	01/23/2025 / Ankita	P13878

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	A0220950	09/18/2025	03/18/2025 / yogesh	01/23/2025 / Ankita	P13883

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	DIW / DI Water	Daily Lab-Certified	07/03/2029	07/03/2024 / lwona	07/03/2024 / lwona	W3112

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)	24G1962003	08/22/2025	02/03/2025 / jignesh	01/31/2025 / jignesh	W3177

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



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MONTERREY, S.A. DE C.V.**

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MONTERREY, N.L. MEXICO  
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## CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE RMB3375)	FORMULA :	Na <sub>2</sub> SO <sub>4</sub>
SPECIFICATION NUMBER :	6399	RELEASE DATE:	ABR/21/2023
LOT NUMBER :	313201		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na <sub>2</sub> SO <sub>4</sub> )	Min. 99.0%	99.7 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.1
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO <sub>4</sub> )	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.002 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.003 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreign matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.1 %
Retained on US Standard No. 60 sieve	Min. 94%	97.3 %
Through US Standard No. 60 sieve	Max. 5%	2.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %

### COMMENTS

QC: PhC Irma Belmares

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

Recd. by R3 on 7/24/23 E 3551

RC-02-01, Ed. 3



Material No.: 9005-05  
Batch No.: 24E0761004  
Manufactured Date: 2024-05-02  
Retest Date: 2029-05-01  
Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay ((CH <sub>3</sub> ) <sub>2</sub> CO) (by GC, corrected for water)	≥ 99.5 %	99.8 %
Color (APHA)	≤ 10	< 5
Residue after Evaporation	≤ 5 ppm	< 1 ppm
Titration Acid (μeq/g)	≤ 0.3	0.1
Titration Base (μeq/g)	≤ 0.5	0.1
Water (H <sub>2</sub> O)	≤ 0.5 %	0.1 %
Solubility in H <sub>2</sub> O	Passes Test	Passes Test
Chloride (Cl)	≤ 0.2 ppm	< 0.2 ppm
Phosphate (PO <sub>4</sub> )	≤ 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	3.6 ppb
Trace Impurities – Chromium (Cr)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Cobalt (Co)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Copper (Cu)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Gallium (Ga)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Germanium (Ge)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Gold (Au)	≤ 20 ppb	< 5 ppb
Trace Impurities – Iron (Fe)	≤ 20.0 ppb	< 1.0 ppb
Trace Impurities – Lead (Pb)	≤ 10.0 ppb	< 10.0 ppb
Trace Impurities – Lithium (Li)	≤ 10.0 ppb	< 1.0 ppb
Trace Impurities – Magnesium (Mg)	≤ 20 ppb	< 1 ppb
Trace Impurities – Manganese (Mn)	≤ 10.0 ppb	< 1.0 ppb

Recd by RP on 9/25/24

E 3804

>>> Continued on page 2 >>>

Acetone  
CMOS

 **avantor™**



Material No.: 9005-05  
Batch No.: 24E0761004

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	< 1.0 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	7.9 ppb
Trace Impurities – Zirconium (Zr)	≤ 10.0 ppb	< 1.0 ppb
Particle Count – 0.5 µm and greater (Rion KS42AF)	≤ 100 par/ml	8 par/ml
Particle Count – 1.0 µm and greater (Rion KS42AF)	≤ 8 par/ml	2 par/ml

>>> Continued on page 3 >>>

Acetone  
CMOS

 **avantor™**



Material No.: 9005-05  
Batch No.: 24E0761004

Test	Specification	Result
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For Microelectronic Use

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



Michelle Bales  
Sr. Manager, Quality Assurance

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT – 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	H303	Quality Test / Release Date	11/07/2024
Lot Number	243570		
Description	HEXANES - OPTIMA		
Country of Origin	United States	Suggested Retest Date	Nov/2029
Chemical Origin	Organic - non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A			
Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear, colorless liquid
ASSAY (N-HEXANE)	%	>= 60	69
ASSAY (SUM C6 HYDROCARBONS)	%	>= 99.9	>99.9
COLOR	APHA	<= 5	<5
DENSITY AT 25 DEGREES C	GM/ML	Inclusive Between 0.653 - 0.673	0.669
EVAPORATION RESIDUE	ppm	<= 1	<1
FLUORESCENCE BACKGROUND	ppb	<= 1	<1
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
OPTICAL ABS AT 195 NM	ABS. UNITS	<= 1	0.74
OPTICAL ABS AT 210 NM	ABS. UNITS	<= 0.25	0.17
OPTICAL ABS AT 220 NM	ABS. UNITS	<= 0.07	0.05
OPTICAL ABS AT 254 NM	ABS. UNITS	<= 0.005	0.001
PESTICIDE RESIDUE ANALYSIS	NG/L	<= 10	<10
REFRACTIVE INDEX @ 25 DEG C		Inclusive Between 1.375 - 1.385	1.379
SUITABILITY FOR GC/MS		= PASS TEST	PASS TEST
SULFUR COMPOUNDS	%	<= 0.005	<0.005
THIOPHENE	PASS/FAIL	= PASS TEST	PASS TEST
WATER (H2O)	%	<= 0.01	<0.01
WATER-SOLUBLE TITRABLE ACID	MEQ/G	<= 0.0003	0.0001

Recd. by RP on 2/12/25

 E3877

Harout Sahagian - Quality Control Manager - Fair Lawn

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.

If there are any questions with this certificate, please call at (800) 227-6701.

\*Based on suggested storage condition.

## Certificate of Analysis

1 Reagent Lane  
 Fair Lawn, NJ 07410  
 201.796.7100 tel  
 201.796.1329 fax

Thermo Fisher Scientific's Quality System has been found to conform to Quality Management System  
 Standard ISO9001:2015 by SAI Global Certificate Number CERT - 0120633

This is to certify that units of the lot number below were tested and found to comply with the specifications of the grade listed. Certain data have been supplied by third parties. Thermo Fisher Scientific expressly disclaims all warranties, expressed or implied, including the implied warranties of merchantability and fitness for a particular purpose. Products are for research use or further manufacturing. Not for direct administration to humans or animals. It is the responsibility of the final formulator and end user to determine suitability based upon the intended use of the end product. Products are tested to meet the analytical requirements of the noted grade. The following information is the actual analytical results obtained.

Catalog Number	H303	Quality Test / Release Date	11/07/2024
Lot Number	243570		
Description	HEXANES - OPTIMA		
Country of Origin	United States	Suggested Retest Date	Nov/2029
Chemical Origin	Organic - non animal		
BSE/TSE Comment	No animal products are used as starting raw material ingredients, or used in processing, including lubricants, processing aids, or any other material that might migrate to the finished product.		

N/A

Result Name	Units	Specifications	Test Value
APPEARANCE		REPORT	Clear, colorless liquid
ASSAY (N-HEXANE)	%	>= 60	69
ASSAY (SUM C6 HYDROCARBONS)	%	>= 99.9	>99.9
COLOR	APHA	<= 5	<5
DENSITY AT 25 DEGREES C	GM/ML	Inclusive Between 0.653 - 0.673	0.669
EVAPORATION RESIDUE	ppm	<= 1	<1
FLUORESCENCE BACKGROUND	ppb	<= 1	<1
IDENTIFICATION	PASS/FAIL	= PASS TEST	PASS TEST
OPTICAL ABS AT 195 NM	ABS. UNITS	<= 1	0.74
OPTICAL ABS AT 210 NM	ABS. UNITS	<= 0.25	0.17
OPTICAL ABS AT 220 NM	ABS. UNITS	<= 0.07	0.05
OPTICAL ABS AT 254 NM	ABS. UNITS	<= 0.005	0.001
PESTICIDE RESIDUE ANALYSIS	NG/L	<= 10	<10
REFRACTIVE INDEX @ 25 DEG C		Inclusive Between 1.375 - 1.385	1.379
SUITABILITY FOR GC/MS		= PASS TEST	PASS TEST
SULFUR COMPOUNDS	%	<= 0.005	<0.005
THIOPHENE	PASS/FAIL	= PASS TEST	PASS TEST
WATER (H2O)	%	<= 0.01	<0.01
WATER-SOLUBLE TITRABLE ACID	MEQ/G	<= 0.0003	0.0001

*Harout Sahagian*

Harout Sahagian - Quality Control Manager - Fair Lawn

Recd by RP on 3/31/25

E 3946

Note: The data listed is valid for all package sizes of this lot of this product, expressed as an extension of this catalog number listed above.  
 If there are any questions with this certificate, please call at (800) 227-6701.  
 \*Based on suggested storage condition.

Acetone

BAKER RESI-ANALYZED® Reagent  
For Organic Residue Analysis

avantor™



Material No.: 9254-03

Batch No.: 24H2762008

Manufactured Date: 2024-04-18

Expiration Date: 2027-04-18

Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
Assay ((CH <sub>3</sub> ) <sub>2</sub> CO) (by GC, corrected for water)	>= 99.4 %	100.0 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.0 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titration Acid (μeq/g)	<= 0.3	0.2
Titration Base (μeq/g)	<= 0.6	<0.1
Water (H <sub>2</sub> O)	<= 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: United States

Packaging Site: Phillipsburg Mfg Ctr & DC

Recd by RP on 03/31/25

E3917

Jamie Croak  
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials LLC

n-Hexane 95%  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis

 **avantors<sup>™</sup>**



Material No.: 9262-03

Batch No.: 25C0362005

Manufactured Date: 2025-01-29

Expiration Date: 2026-04-30

Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	$\leq 10$	6
ECD-Sensitive Impurities (as EthyleneDibromide) - Single Impurity Peak (ng/mL)	$\leq 5$	5
Assay (Total Saturated C <sub>6</sub> Isomers) (by GC, corrected for water)	$\geq 99.5 \%$	100.0 %
Assay (as n-Hexane) (by GC, corrected for water)	$\geq 95 \%$	100 %
Color (APHA)	$\leq 10$	10
Residue after Evaporation	$\leq 1.0$ ppm	0.1 ppm
Substances Darkened by H <sub>2</sub> SO <sub>4</sub>	Passes Test	Passes Test
Water (by KF, coulometric)	$\leq 0.05 \%$	$< 0.01 \%$

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

Country of Origin: United States  
Packaging Site: Phillipsburg Mfg Ctr & DC

E3928



Jamie Croak  
Director Quality Operations, Bioscience Production

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

Avantor Performance Materials U.S.

Hydrochloric Acid, 36.5–38.0%  
 BAKER INSTRA-ANALYZED® Reagent  
 For Trace Metal Analysis



Material No.: 9530-33  
 Batch No.: 0000281827  
 Manufactured Date: 2021/03/30  
 Retest Date: 2026/03/29  
 Revision No: 1

## Certificate of Analysis

Test	Specification	Result
ACS – Assay (as HCl) (by acid–base titrn)	36.5 – 38.0 %	37.6
ACS – Color (APHA)	<= 10	5
ACS – Residue after Ignition	<= 3 ppm	1
ACS – Specific Gravity at 60°/60°F	1.185 – 1.192	1.189
ACS – Bromide (Br)	<= 0.005 %	< 0.005
ACS – Extractable Organic Substances	<= 5 ppm	< 1
ACS – Free Chlorine (as Cl <sub>2</sub> )	<= 0.5 ppm	< 0.5
Phosphate (PO <sub>4</sub> )	<= 0.05 ppm	< 0.03
Sulfate (SO <sub>4</sub> )	<= 0.5 ppm	< 0.3
Sulfite (SO <sub>3</sub> )	<= 0.8 ppm	0.3
Ammonium (NH <sub>4</sub> )	<= 3 ppm	< 1
Trace Impurities – Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities – Aluminum (Al)	<= 10.0 ppb	0.5
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities – Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities – Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities – Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities – Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities – Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	15.0
Trace Impurities – Chromium (Cr)	<= 1.0 ppb	< 0.4
Trace Impurities – Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities – Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 1.0 ppb	< 0.2



Test	Specification	Result
Trace Impurities – Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities – Gold (Au)	<= 4.0 ppb	3.0
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities – Iron (Fe)	<= 15.0 ppb	1.0
Trace Impurities – Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities – Magnesium (Mg)	<= 10.0 ppb	< 0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	0.2
Trace Impurities – Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities – Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities – Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities – Selenium (Se), For Information Only	ppb	1.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	18.0
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities – Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities – Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities – Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities – Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities – Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities – Titanium (Ti)	<= 1.0 ppb	< 0.2
Trace Impurities – Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities – Zinc (Zn)	<= 5.0 ppb	0.4
Trace Impurities – Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use

Product Information (not specifications):

Appearance (clear, fuming liquid)

Meets ACS Specifications

Country of Origin: US

Packaging Site: Phillipsburg Mfg Ctr & DC

  
Jamie Ethier  
Vice President Global Quality



# 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/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](http://www.agilent.com) for information regarding this RM.

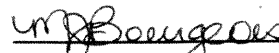
**Expiration of Certification:**

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/](http://www.agilent.com/quality/)  
CSD-QA-015.1



ISO 17025 Cert  
No. AT-1937



## 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 ( $\mu\text{g/mL}$ ): **100**  
 NIST Test ID#: **6UTB**

Solvent(  
Aceton

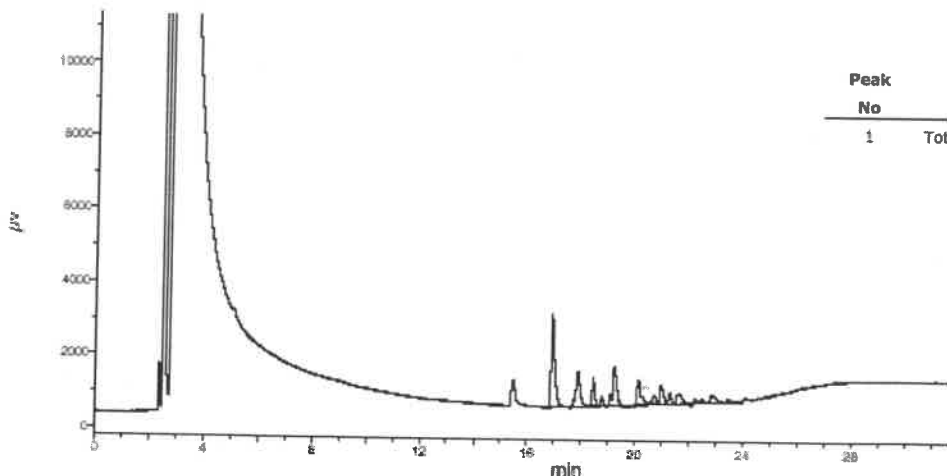
Weight(s) shown below were combined and diluted to (mL): **100.0**  
 5E-05 Balance Uncertainty  
 0.057 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc ( $\mu\text{g/mL}$ )	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 5 $\mu\text{m}$  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 = 1.5 $\mu\text{L}$ , Range=3





110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

[www.restek.com](http://www.restek.com)

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



### 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.:** A0203672

**Description:** Aroclor® 1242 Standard

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

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

**Expiration Date:** January 31, 2030 **Storage:** 25°C nominal

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

p12928

→

p12932

AJ

12/27/23

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty* (95% C.L.; K=2)
1	Aroclor 1242	53469-21-9	01141	—%	1,004.7 µg/mL	+/- 55.7515

**Solvent:** Hexane

**CAS #** 110-54-3

**Purity** 99%

\* Expanded Uncertainty displayed in same units as Grav. Conc.

## Quality Confirmation Test

**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:**

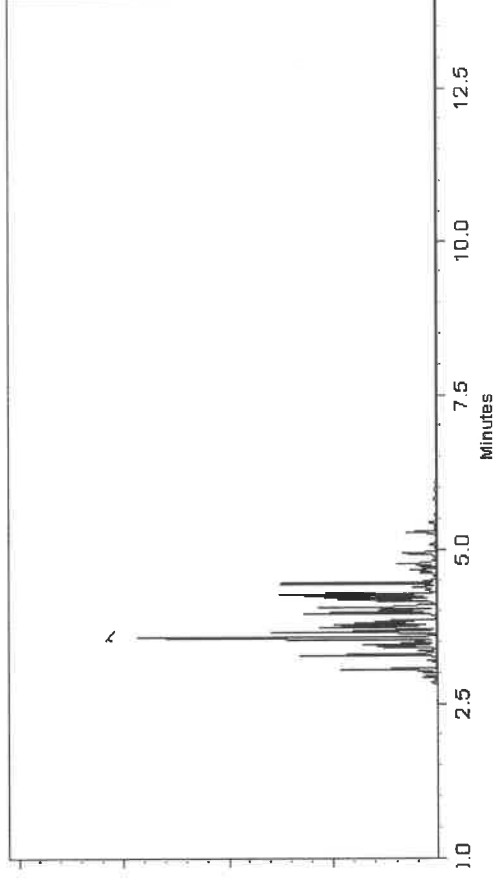
ECD

**Split Vent:**

10 ml/min.

**Inj. Vol**

0.2ul



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.

*Russ Boothamer*

Russ Boothamer - Operations Technician I

Date Mixed: 26-Oct-2023

Balance Serial #

B442140311

*Jennifer Polino*

Jennifer Polino - Operations Tech III - ARM QC

Date Passed: 06-Nov-2023

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



110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



### 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.:** A0202803

**Description:** Aroclor® 1248 Standard

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

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

**Expiration Date:** January 31, 2030 **Storage:** 25°C nominal

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

P1219697  
P1219697  
A1  
12104123

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1248	12672-29-6	13897600	---%	1,001.7 µg/mL	+/- 55.5850

**Solvent:** Hexane

**CAS #** 110-54-3

**Purity** 99%

\* Expanded Uncertainty displayed in same units as Grav. Conc.

## Quality Confirmation Test

**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:**

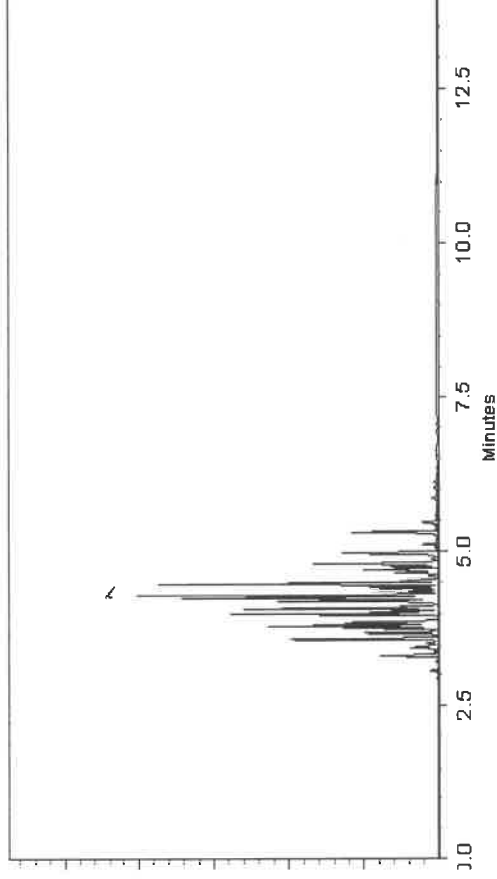
ECD

**Split Vent:**

10 ml/min.

**Inj. Vol**

0.2ul



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.

Laith Clemente - Operations Technician I

Date Mixed: 03-Oct-2023

Balance Serial #

1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 09-Oct-2023

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

CERTIFIED WEIGHT REPORT

Part Number:  
20064

Solvent(s):  
Hexane

Lot#  
273615

Lot Number:  
022023

CLP PCB'S - Aroclor Mix

Description:  
Aroclors 1016 & 1260

022023

Expiration Date:  
Ambient (20 °C)

5E-05 Balance Uncertainty

Recommended Storage:  
Nominal Concentration (µg/mL):  
6UTB

0.010 Flask Uncertainty

NIST Test ID#:  
200.0

200.0

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

5E-05 Balance Uncertainty

Formulated By:  
Benson Chan

022023

Reviewed By:  
Pedro L. Rentas

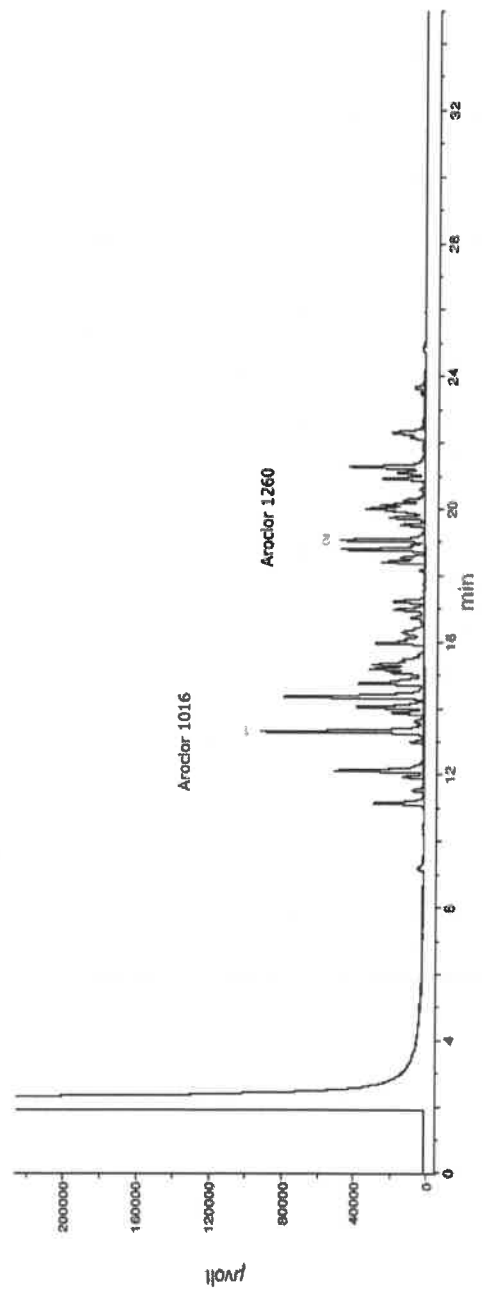
022023

PR2946 718  
↓  
12/20/23  
P12955

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Purity Uncertainty	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1. Aroclor 1016	15	020491JC	1000	100	0.2	0.20004	0.20060	1002.8	4.0	12674-11-2	N/A	N/A
2. Aroclor 1260	21	020491JC	1000	100	0.2	0.20004	0.20081	1003.9	4.0	11086-82-5	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).  
\* 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 Stortier  
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 = 280°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 = Etdaq Channel 1  
Standard Injection = 1.5µL, Range=3









Certified Reference Material CRM

CERTIFIED WEIGHT REPORT

Part Number:  
20064

Lot Number:  
022023

Description:  
CLP PCB'S - Aroclor Mix  
Aroclors 1016 & 1260

Expiration Date:  
022033

Recommended Storage:  
Ambient (20 °C)

Nominal Concentration (µg/mL):  
1000

NIST Test ID#:  
6UTB

Solvent(s):  
Hexane

Lot#:  
273615

Formulated By:  
Benson Chan

Reviewed By:  
Pedro L. Rentas

DATE:  
022023

DATE:  
022023

Weight(s) shown below were combined and diluted to (mL.):  
200.0

Balance Uncertainty:  
0.010

Flask Uncertainty:  
0.010

Part Number:  
20064

Lot Number:  
022023

Description:  
CLP PCB'S - Aroclor Mix  
Aroclors 1016 & 1260

Expiration Date:  
022033

Recommended Storage:  
Ambient (20 °C)

Nominal Concentration (µg/mL):  
1000

NIST Test ID#:  
6UTB

Solvent(s):  
Hexane

Lot#:  
273615

Formulated By:  
Benson Chan

Reviewed By:  
Pedro L. Rentas

DATE:  
022023

DATE:  
022023

Weight(s) shown below were combined and diluted to (mL.):  
200.0

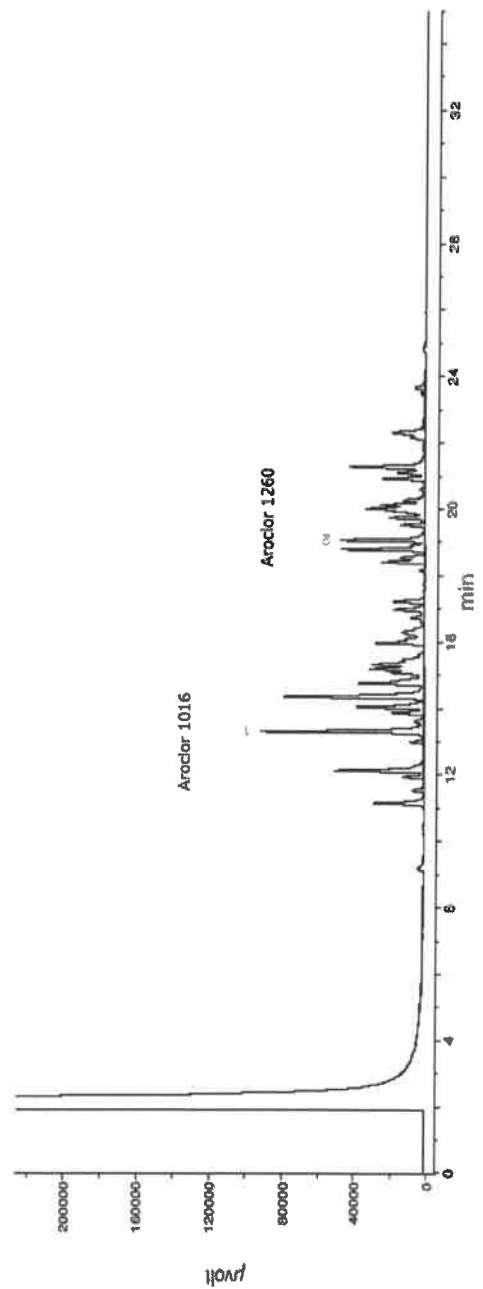
Balance Uncertainty:  
0.010

Flask Uncertainty:  
0.010

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Purity Uncertainty	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1. Aroclor 1016	15	020491JC	1000	100	0.2	0.20004	0.20060	1002.8	4.0	12674-11-2	N/A	N/A
2. Aroclor 1260	21	020491JC	1000	100	0.2	0.20004	0.20081	1003.9	4.0	11086-82-5	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).  
\* 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 Stortier  
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 = 280°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 = Etdaq Channel 1  
Standard Injection = 1.5µL, Range=3







Certified Reference Material CRM

CERTIFIED WEIGHT REPORT

Part Number:  
Lot Number:  
Description:

99139  
121823  
Aroclor 1254

Solvent(s):  
Lot#

Formulated By: Anthony Mahoney  
121823  
DATE

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

121833  
Ambient (20 °C)  
100  
6UTB

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

Note: Aroclor 1254 is a mix of isomers.

Reviewed By: Pedro L. Rentas  
121823  
DATE

Expanded  
Uncertainty  
(+/-) (µg/mL)

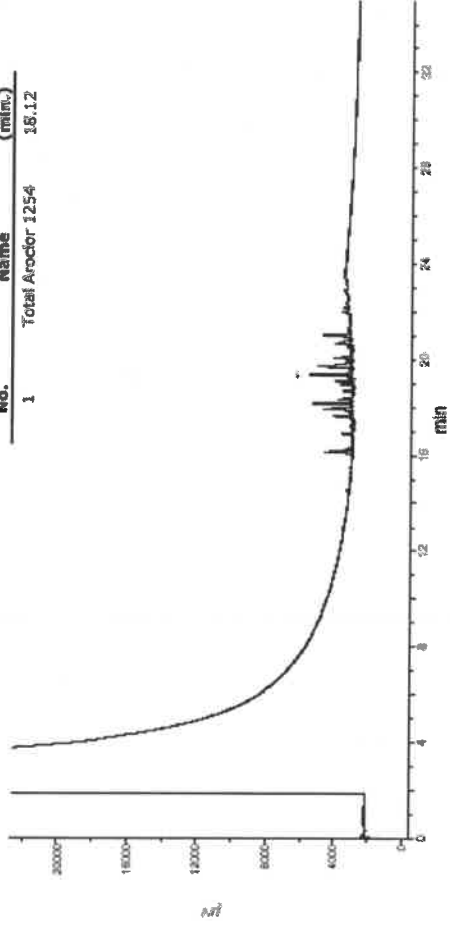
SDS Information  
(Solvent Safety Info. On Attached pg.)  
CAS# OSHA PEL (TWA) LD50

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Initial Uncertainty	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	CAS#	OSHA PEL (TWA)	LD50
1. Aroclor 1254	79100	121823	0.10	2.00	0.017	1003.3	100.1	1.8	11097-69-1	0.5mg/m3 (skin)	or-rat 1295mg/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 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  
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 = 250 °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 = Etdaq Channel 1  
Standard injection = 1.5µL, Range=3

Peak No.	Name	FID RT (min.)
1	Total Aroclor 1254	18.12







110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



### 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.:** A0206810

**Description :** Pesticide Surrogate Mix  
Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul

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

**Expiration Date :** April 30, 2030 **Storage:** 10°C or colder

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

P13348  
↓  
P13357  
10  
DAUF  
04/25/2024

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8	RP220407	99%	200.3 µg/mL	+/- 11.1143
2	Decachlorobiphenyl (BZ# 209)	2051-24-3	30638	99%	200.6 µg/mL	+/- 11.1298

\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

### Tech Tips:

Decachlorobiphenyl has poor solubility in most organic solvents. The maximum concentration that can be prepared in acetone, hexane, or isooctane is 200µg/mL. Temperature will affect the solubility as well. Storing solutions at reduced temperatures will cause decachlorobiphenyl to precipitate.

Products containing decachlorobiphenyl must be sonicated for a minimum of 10 minutes prior to opening the ampul. Because each ultrasonic bath operates at a different energy level, 10 minutes is a guideline only. Longer sonication time will not affect product quality.

These precautions apply to working solutions prepared in your laboratory as well. The amount of compound that precipitates depends on concentration AND temperature. If you store your standards at a temperature lower than 4°C (even dilute solutions), allow extra sonication time.

# Quality Confirmation Test

**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

**Split Vent:**

10 ml/min.

**Inj. Vol**

1µl



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.

  
Laith Clemente - Operations Technician I

Date Mixed: 22-Jan-2024

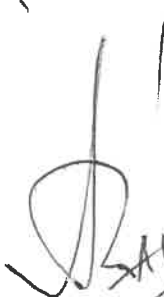
Balance Serial # 1128360905

  
Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 24-Jan-2024

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

P 13348  
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P 13357  
10

  
SAUF  
04/25/2025



110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



### 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.:** A0206810

**Description :** Pesticide Surrogate Mix  
Pesticide Surrogate Mix 200 µg/mL, Acetone, 1mL/ampul

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

**Expiration Date :** April 30, 2030 **Storage:** 10°C or colder

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

P13348  
↓  
P13357  
10  
DAUF  
04/25/2024

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2,4,5,6-Tetrachloro-m-xylene	877-09-8	RP220407	99%	200.3 µg/mL	+/- 11.1143
2	Decachlorobiphenyl (BZ# 209)	2051-24-3	30638	99%	200.6 µg/mL	+/- 11.1298

\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

### Tech Tips:

Decachlorobiphenyl has poor solubility in most organic solvents. The maximum concentration that can be prepared in acetone, hexane, or isooctane is 200µg/mL. Temperature will affect the solubility as well. Storing solutions at reduced temperatures will cause decachlorobiphenyl to precipitate.

Products containing decachlorobiphenyl must be sonicated for a minimum of 10 minutes prior to opening the ampul. Because each ultrasonic bath operates at a different energy level, 10 minutes is a guideline only. Longer sonication time will not affect product quality.

These precautions apply to working solutions prepared in your laboratory as well. The amount of compound that precipitates depends on concentration AND temperature. If you store your standards at a temperature lower than 4°C (even dilute solutions), allow extra sonication time.



## Quality Confirmation Test

**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

**Split Vent:**

10 ml/min.

**Inj. Vol**

1µl



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.

  
Laith Clemente - Operations Technician I

Date Mixed: 22-Jan-2024

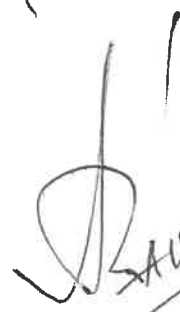
Balance Serial # 1128360905

  
Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 24-Jan-2024

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

P 13348  
↓  
P 13357  
10

  
SAUF  
04/25/2025



ISO 17034

## Reference Material Certificate

### Product Information Sheet

**Product Name:** Aroclor 1221 Standard  
**Product Number:** PP-292-1  
**Storage Conditions:** Store at Room Temperature (15° to 30°C).

**Lot Number:** 0006783205  
**Lot Issue Date:** 20-Feb-2024  
**Expiration Date:** 31-Mar-2032

Component Name	Concentration	Uncertainty	CAS#	Analyte Lot
Aroclor 1221	100.3 ±	0.5 µg/mL	011104-28-2	NT01017

**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](http://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.

P13342  
AJ  
05106124  
P13343

Page: 1 of 2

CSD-QA-015.2

ISO 17025

Cert No. AT-1937

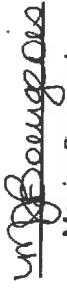
250 Smith Street North Kingstown, Rhode Island 02852 [www.agilent.com/quality](http://www.agilent.com/quality)



**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/](http://www.agilent.com/quality/)  
CSD-QA-015.2

ISO 17025  
Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 [www.agilent.com/quality](http://www.agilent.com/quality)



110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



### 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.:** A0207475

**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, 2030 **Storage:** 25°C nominal

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

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1268	11100-14-4	10947000	---%	1,000.0 µg/mL	+/- 55.4925

\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

P 13380  
↓  
P 13381  
↓  
SAZU  
05/6/2024



## Quality Confirmation Test

**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:**

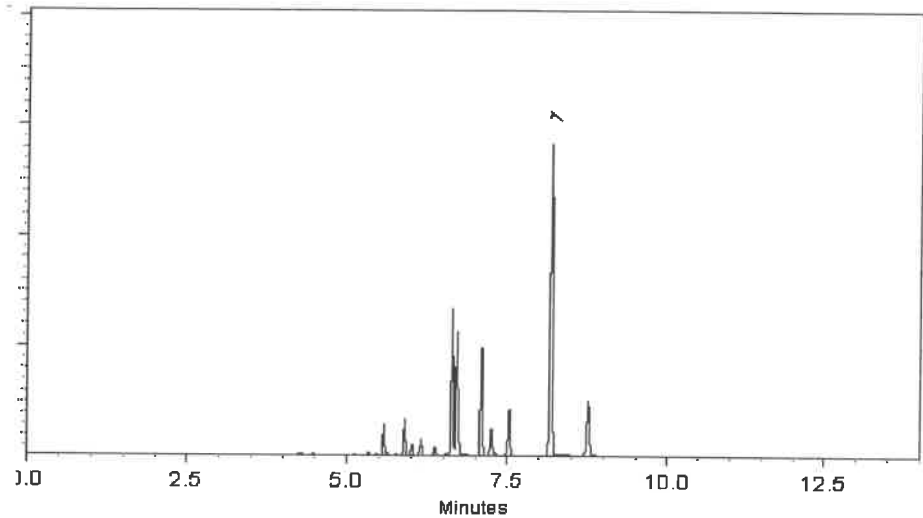
ECD

**Split Vent:**

Split ratio 500:1

**Inj. Vol**

0.2µl



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.

*Michael Maye*  
Michael Maye - Operations Tech I

Date Mixed: 06-Feb-2024

Balance Serial # B442140311

*Dylan Murphy*  
Dylan Murphy - Operations Technician I

Date Passed: 09-Feb-2024

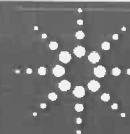
Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

P13380 } ②  
↓  
P13381 }  
1

*[Signature]*  
05/6/2024



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](http://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.

P13589  
↓  
P13590AJ  
10/14/24



ISO 17034



**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# 95T215321

Page: 2 of 2

[www.agilent.com/quality/](http://www.agilent.com/quality/)

CSD-QA-015.1



ISO 17025  
Cert No. AT-

**Reference Material Certificate**  
**Product Information Sheet**

**Product Name:** Aroclor 1248 Standard

**Lot Number:** 0006726317

**Product Number:** PP-342-1

**Lot Issue Date:** 27-Jan-2023

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

**Expiration Date:** 28-Feb-2031

Component Name	Concentration	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 (RM) 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. Purity values are taken from approved vendor raw material certificates.

**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 (RM) 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](http://www.agilent.com) for information regarding this analytical reference material.

**Intended Use:**

This analytical reference (RM) 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 (RM) 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.

P13591  
↓  
P13592

AS  
10/14/2024



**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/](http://www.agilent.com/quality/)

CSD-QA-015.1

ISO 17025



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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



### 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.:** A0210629

**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 :** July 31, 2030 **Storage:** 25°C nominal

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

P13697  
↓  
P13701 } Y.P.  
10/19/24

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1016	12674-11-2	07	----%	1,005.3 µg/mL	+/- 55.7809
2	Aroclor 1260	11096-82-5	1320657	----%	1,000.0 µg/mL	+/- 55.4850

\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

## Quality Confirmation Test

**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:**

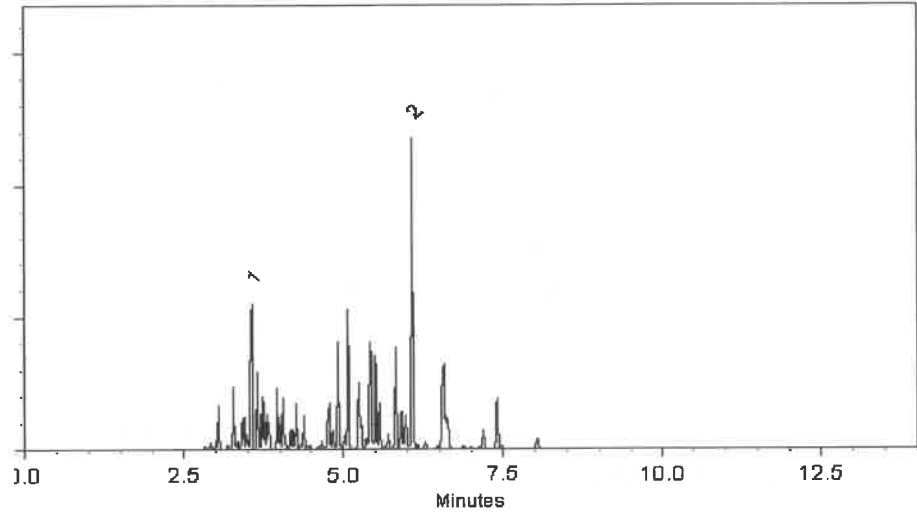
ECD

**Split Vent:**

10 ml/min.

**Inj. Vol**

0.2µl



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.

Laith Clemente - Operations Technician I

Date Mixed: 22-Apr-2024

Balance Serial # B442140311

Dillan Murphy - Operations Technician I

Date Passed: 24-Apr-2024

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 expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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

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

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls 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 ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





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## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



### 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.:** A0215270

**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, 2030 **Storage:** 25°C nominal

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

P13902 } Y.P.  
P13703 } 10/17/24

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1221	11104-28-2	14969200	----%	1,005.0 µg/mL	+/- 55.7700

\* Expanded Uncertainty displayed in same units as Grav. Conc.

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



## Quality Confirmation Test

**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:**

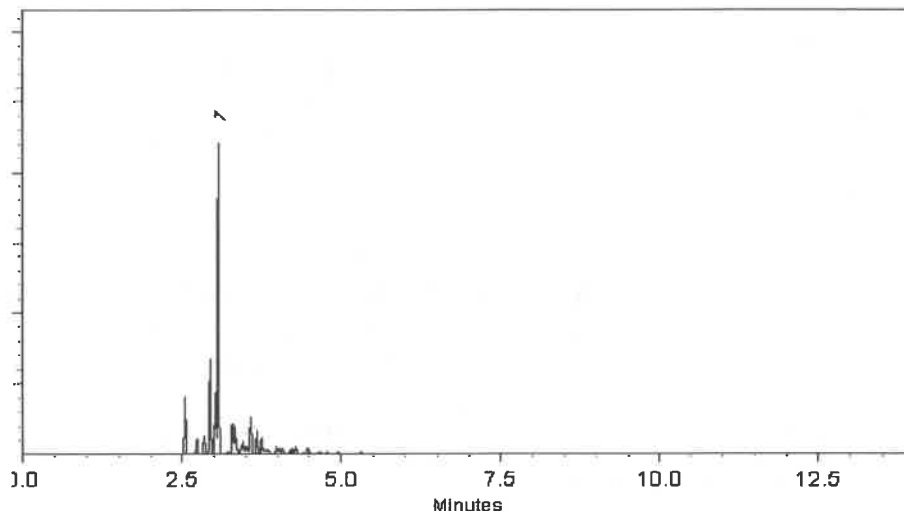
ECD

**Split Vent:**

10 ml/min.

**Inj. Vol**

1µl



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.

*Michael Maye*  
Michael Maye - Operations Tech I

Date Mixed: 16-Aug-2024

Balance Serial # 1128360905

*Jennifer Pollino*  
Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 20-Aug-2024

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 expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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

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

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls 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 ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





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CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



**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.:** A0217391

**Description :** Aroclor® 1254 Standard

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

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

**Expiration Date :** January 31, 2031 **Storage:** 25°C nominal

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

## CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1254	11097-69-1	124-191-B	----%	1,004.7 µg/mL	+/- 55.7515

\* Expanded Uncertainty displayed in same units as Grav. Conc.

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

P13830  
↓  
P13832  
AJ  
12/09/24

# Quality Confirmation Test

**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:**

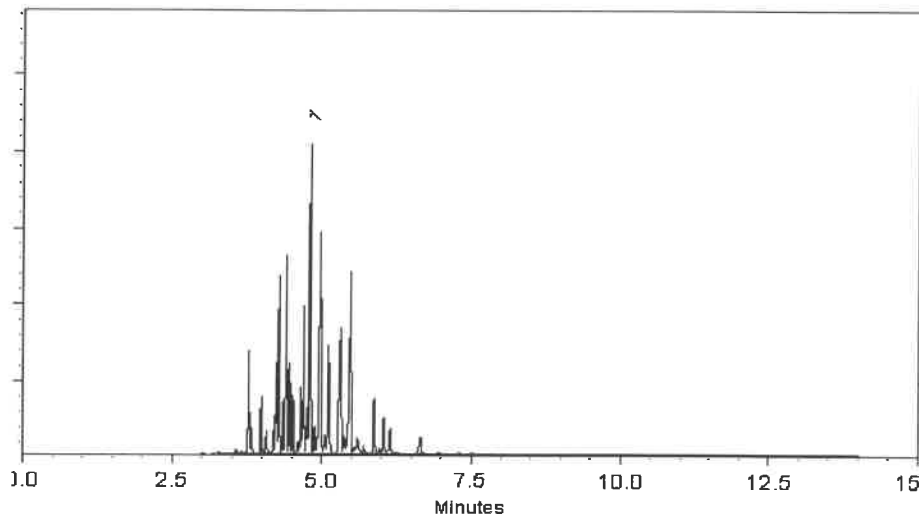
ECD

**Split Vent:**

300 ml/min.

**Inj. Vol**

1µl



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.

*Michael Maye*  
**Michael Maye - Operations Tech I**

**Date Mixed:** 02-Oct-2024      **Balance Serial #** C322230531

*Jennifer Pollino*  
**Jennifer Pollino - Operations Tech III - ARM QC**

**Date Passed:** 07-Oct-2024

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



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**CERTIFIED REFERENCE MATERIAL**

# Certificate of Analysis

*chromatographic plus*



## 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.*

<b>Catalog No. :</b>	<u>32008</u>	<b>Lot No.:</b>	<u>A0219655</u>
<b>Description :</b>	<u>Aroclor® 1232 Standard</u>		
	<u>Aroclor® 1232 Standard 1,000 µg/mL, Hexane, 1mL/ampul</u>		
<b>Container Size :</b>	<u>2 mL</u>	<b>Pkg Amt:</b>	<u>&gt; 1 mL</u>
<b>Expiration Date :</b>	<u>March 31, 2031</u>	<b>Storage:</b>	<u>25°C nominal</u>
<b>Handling:</b>	<u>This product contains PCBs.</u>	<b>Ship:</b>	<u>Ambient</u>

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1232	11141-16-5	15665-01	---%	1,007.0 µg/mL	+/- 55.8810

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

\* Expanded Uncertainty displayed in same units as Grav. Conc.

P13878  
↓  
P13880  
A3  
01/28/25

## Quality Confirmation Test

**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:**

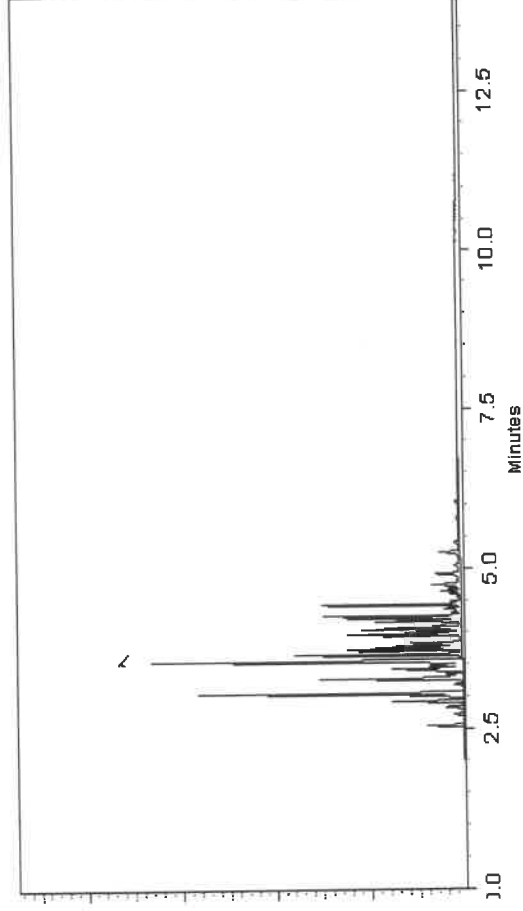
ECD

**Split Vent:**

10 ml/min.

**Inj. Vol**

1µl



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.

*Michael Maye*

Michael Maye - Operations Tech I

Date Mixed: 02-Dec-2024

Balance Serial #

C322230531

*Brittany Federhik*

Brittany Federhiko - Operations Tech I

Date Passed: 05-Dec-2024

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



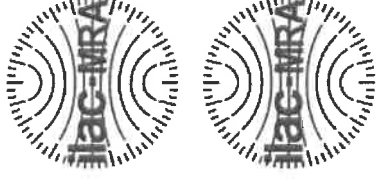
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CERTIFIED REFERENCE MATERIAL

## Certificate of Analysis

*chromatographic plus*



### 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.:** A0220950

**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, 2031      **Storage:** 25°C nominal

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

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Aroclor 1262	37324-23-5	10849100	----%	1,002.0 µg/mL	+/- 55.6035

**Solvent:** Hexane

**CAS #** 110-54-3  
**Purity** 99%

\* Expanded Uncertainty displayed in same units as Grav. Conc.

P13882

↓

AJ  
01/28/25

P13883



## Quality Confirmation Test

**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:**

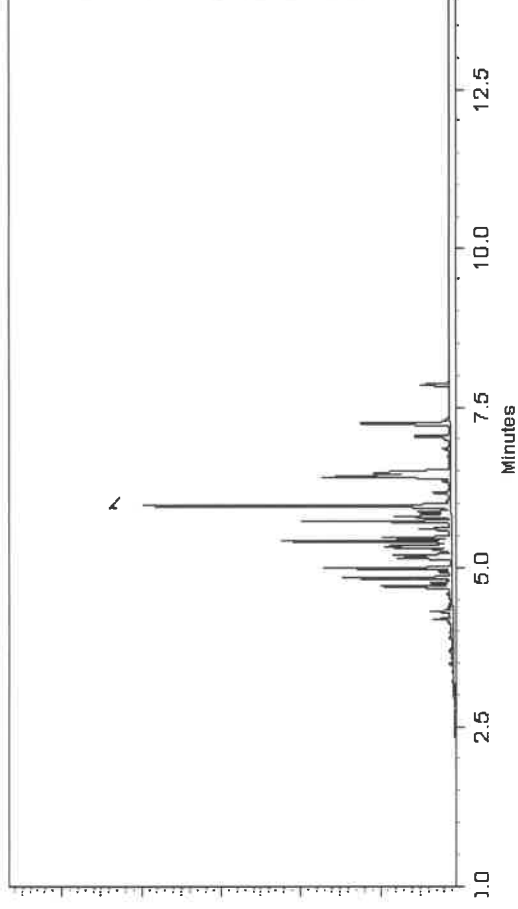
ECD

**Split Vent:**

300 ml/min.

**Inj. Vol**

0.2µl



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 Suckal - Mix Technician

Date Mixed: 09-Jan-2025 Balance Serial # C322230531



Britiany Federinko - Operations Tech I

Date Passed: 14-Jan-2025

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

n-Hexane 95%  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis



Material No.: 9262-03  
Batch No.: 24G1962003  
Manufactured Date: 2024-05-23  
Expiration Date: 2025-08-22  
Revision No.: 0

## Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	$\leq 5$	3
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	$\leq 10$	1
ECD-Sensitive Impurities (as Ethylene Dibromide) - Single Impurity Peak (ng/mL)	$\leq 5$	1
Assay (Total Saturated C <sub>6</sub> Isomers) (by GC, corrected for water)	$\geq 99.5 \%$	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	$\geq 95 \%$	98 %
Color (APHA)	$\leq 10$	5
Residue after Evaporation	$\leq 1.0$ ppm	0.1 ppm
Substances Darkened by H <sub>2</sub> SO <sub>4</sub>	Passes Test	Passes Test
Water (by KF, coulometric)	$\leq 0.05 \%$	< 0.01 %

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

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

Jamie Croak  
Director Quality Operations, Bioscience Production