

#### **Prep Standard - Chemical Standard Summary**

Order ID : 03572

Test : Herbicide

Prepbatch ID : PB154614,

Sequence ID/Qc Batch ID: ps080423,ps080923,

#### Standard ID :

EP2356,EP2362,EP2371,PP22128,PP22162,PP22315,PP22316,PP22317,PP22328,PP22331,PP22332,PP22333,PP22334,PP22335,PP22335,PP22336,

#### Chemical ID :

E3143,E3370,E3382,E3412,E3516,E3523,E3533,M5039,M5211,P10340,P10828,P12065,P12066,P12067,P12068,P12069,P12070,P12070,P12071,P12072,P12073,P12074,P12409,P12410,P12616,P12626,P8444,P8445,P8803,P8825,W2606,

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#### Extractions STANDARD PREPARATION LOG

<u>Recipe</u> <u>ID</u> 3883	NAME 12N H2SO4 solution	<u>NO.</u> EP2356	<u>Prep Date</u> 07/10/2023	Expiration Date 01/10/2024	Prepared By Rajesh Parikh	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By RUPESHKUMAR SHAH 07/10/2023
FROM	333.00000ml of M5211 + 667.00000r	nl of W2606	i = Final Qua	ntity: 1000.000	ml			
<u>Recipe</u> <u>ID</u> 601	NAME Acidified Sodium Sulphate 2	<u>NO.</u> EP2362	<b>Prep Date</b> 07/18/2023	Expiration Date 10/23/2023	<u>Prepared</u> <u>By</u> Rajesh Parikh	ScaleID Extraction_SC ALE_2 (EX-SC-2)	<u>PipetteID</u> None	Supervised By RUPESHKUMAR SHAH 07/18/2023

FROM 100.00000ml of E3370 + 150.00000ml of M5039 + 3000.00000ml of E3412 = Final Quantity: 3000.000 gram

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#### Extractions STANDARD PREPARATION LOG

Recipe ID 3884 FROM	NAME 6 N NAOH 1000.00000ml of W2606 + 240.0000	<u>NO.</u> EP2371 Ogram of E3	Prep Date 08/01/2023 3382 = Final (			ScaleID Extraction_SC ALE_2 (EX-SC-2)	PipetteID None	Supervised By RUPESHKUMAR SHAH 08/01/2023
Recipe	NAME	NO.	Pren Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
Recipe ID 60	NAME 5000 PPB Herbicide Surg Spike (Free Acid)	<u>NO.</u> PP22128	Prep Date 06/16/2023	Expiration Date 12/13/2023	Prepared By Abdul Mirza	<u>ScaleID</u> None	PipettelD None	Supervised By Ankita Jodhani 06/20/2023

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#### Pest/Pcb STANDARD PREPARATION LOG

<u>Recipe</u> <u>ID</u> 1848	NAME 5000/500000 PPB Herbicide Spike (Free Acid)	<u>NO.</u> PP22162	Prep Date 06/29/2023	Expiration Date 12/24/2023	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Yogesh Patel 06/30/2023
<u>FROM</u>	1.25000ml of P12409 + 1.25000ml o	f P12410 + 4	47.50000ml of	f E3523  = Fina	l Quantity: 50.0	00 ml		
<u>Recipe</u> <u>ID</u> 3908	NAME 2/200 PPM Herb Mega Mix 2nd Source (RESTEK+ABSOLUTE)	<u>NO.</u> PP22315	Prep Date 07/05/2023	Expiration Date 12/30/2023	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Ankita Jodhani 07/06/2023

**FROM** 0.20000ml of P10828 + 1.00000ml of P12616 + 1.00000ml of P12626 + 1.00000ml of P8445 + 96.80000ml of E3533 = Final Quantity: 100.000 ml

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5.00000ml of E3533 + 0.50000ml of PP22315 = Final Quantity: 1.000 ml	<u>Recipe</u> <u>ID</u> 3909	NAME 1000 PPB HERB MIX ICV STD(RESTEK+ABSOLUTE)	<u>NO.</u> PP22316	Prep Date 07/05/2023	Expiration Date 12/30/2023	Prepared By Abdul Mirza	<u>ScaleID</u> None	PipetteID None	Supervised By Ankita Jodhani 07/06/2023
	FROM	5.00000ml of E3533 + 0.50000ml of	PP22315 =	Final Quantit	y: 1.000 ml				

<u>Recipe</u> <u>ID</u> 3910	NAME 750 PPB ICV HERB STD(RESTEK+ABSOLUTE)	<u>NO.</u> PP22317	Prep Date 07/05/2023	Expiration Date 12/30/2023	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By Ankita Jodhani 07/06/2023
FROM	0.25000ml of E3533 + 0.75000ml of I	PP22316 =	Final Quantity	y: 1.000 ml				07/06/2023

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Recipe ID 1321	NAME 2/200 PPM Herb Mega Mix	<u>NO.</u> PP22328	Prep Date 07/07/2023	Expiration Date 12/30/2023	Prepared By Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/07/2023
FROM	0.20000ml of P8825 + 1.00000ml of Quantity: 100.000 ml	P10340 + 1.	.00000ml of P	8444 + 1.0000	0ml of P8803 +	96.80000ml of F	E3533 = Final	

Recipe ID 1453	NAME 1000 PPB Herb MIX STD	<u>NO.</u> PP22331	Prep Date 07/07/2023	Expiration Date 01/03/2024	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	PipetteID None	Supervised By mohammad ahmed 07/07/2023
FROM	I 0.50000ml of E3533 = Final Quantity	I /: 1.000 ml	<u> </u>					0110112023

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<u>Recipe</u> <u>ID</u> 1456	NAME 200 PPB Herb MIX STD	<u>NO.</u> PP22332	Prep Date 07/07/2023	Expiration Date 01/03/2024	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/07/2023
FROM	0.80000ml of E3533 + 0.20000ml of	PP22331 =	Final Quantit	y: 1.000 ml				

<u>Recipe</u> <u>ID</u> 1455	NAME 500 PPB Herb MIX STD	<u>NO.</u> PP22333	Prep Date 07/07/2023	Expiration Date 01/03/2024	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/07/2023
FROM	0.50000ml of E3533 + 0.50000ml of	I PP22331 =	Final Quantit	y: 1.000 ml				

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Recipe ID 1453	NAME 1000 PPB Herb MIX STD	<u>NO.</u> PP22334	Prep Date 07/07/2023	Expiration Date 12/30/2023	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/07/2023
FROM	0.50000ml of E3533 + 0.50000ml of	PP22328 =	Final Quantit	y: 1.000 ml				

<u>Recipe</u> <u>ID</u> 1452	NAME 1500 PPB HERB MIX STD	<u>NO.</u> PP22335	Prep Date 07/07/2023	Expiration Date 12/30/2023	<u>Prepared</u> <u>By</u> Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/07/2023
FROM	0.25000ml of E3533 + 0.75000ml of	PP22328 =	Final Quantity	y: 1.000 ml				0110112020

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<u>Recipe</u> <u>ID</u> 1454	NAME 750 PPB Herb MIX STD	<u>NO.</u> PP22336	Prep Date 07/07/2023	Expiration Date 12/30/2023	Prepared By Abdul Mirza	<u>ScaleID</u> None	<u>PipetteID</u> None	Supervised By mohammad ahmed 07/07/2023
FROM	0.25000ml of E3533 + 0.75000ml of	PP22334 =	Final Quantit	y: 1.000 ml				



### CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	J9335-3 / 2,2,4 TRIMETHYLPENTANE, RESI ANA,4L	60059	09/18/2023	10/18/2021 / Rajesh	07/27/2021 / RAJESH	E3143
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9244-03 / Ether, Anhydrous, Purified (cs/4x4L)	0000288039	01/17/2024	08/01/2022 / Rajesh	07/13/2022 / Rajesh	E3370
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19510-5 / Sodium Hydroxide Pellets 2.5 Kg, Pk of 4	220601-B017657	12/04/2023	08/04/2022 / Rajesh	08/03/2022 / Rajesh	E3382
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	139404	10/23/2023	10/18/2022 / Rajesh	10/13/2022 / Rajesh	E3412
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	22L2862006	12/13/2023	06/13/2023 / Rajesh	06/08/2023 / Rajesh	E3516
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone,	22L2862006	12/24/2023	06/24/2023 /	06/21/2023 /	E3523



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9262-03 / Hexane, Ultra-Resi (cs/4x4L)	23C2462011	01/03/2024	07/03/2023 / Rajesh	06/29/2023 / Rajesh	E3533
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)	0000250349	12/15/2024	02/23/2022 / mohan	09/18/2021 / mohan	M5039
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9673-33 / Sulfuric Acid, Instra-Analyzed (cs/6c2.5L)	22D0862014	01/20/2025	08/22/2022 /	04/26/2022 / mohan	M5211
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32055 / Herbicide Mix, 500/8000, Standard #1 [methyl ester] 200ug/mL, hexane, 1mL/ampul	A0165730	01/07/2024	07/07/2023 / Abdul	03/05/2021 / dhaval	P10340

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	70934 / Dalapan methyl ester	062121	12/30/2023	06/30/2023 / Abdul	06/22/2021 / dhaval	P10828

		Date	Opened By	Received By	Lot #
ide, 8000 ogate [free ophenyl ., 200ug/mL,	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12065
0	phenyl	phenyl	phenyl	phenyl	phenyl



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12066
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12067
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12068
			Funination	Data Onemad (		Chamtash
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12069
			Expiration	Date Opened /	Received Date /	Chemtech
Supplier	ItemCode / ItemName	Lot #	Date	Opened By	Received By	Lot #
Restek	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12070
		_	Expiration	Date Opened /	Received Date /	Chemtech
Supplier	ItemCode / ItemName	Lot #	Date	Opened By	Received By	Lot #
Restek	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12071



ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12072
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL, MeOH	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12073
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,	A0184439	12/16/2023	06/16/2023 / Abdul	08/09/2022 / Ankita	P12074
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids	0006686742	12/29/2023	06/29/2023 / Abdul	02/16/2023 / Abdul	P12409
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids	0006686742	12/29/2023	06/29/2023 / Abdul	02/16/2023 / Abdul	P12409
ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids	0006686742	12/29/2023	06/29/2023 / Abdul	02/16/2023 / Abdul	P12410
	32049 / Herbicide, 8000         series, 515 Surrogate [free         acid] 2,4-dichlorophenyl         acetic acid, 1mL, 200ug/mL,         MeOH         ItemCode / ItemName         32049 / Herbicide, 8000         series, 515 Surrogate [free         acid] 2,4-dichlorophenyl         acetic acid, 1mL, 200ug/mL,         MeOH         ItemCode / ItemName         32049 / Herbicide, 8000         series, 515 Surrogate [free         acid] 2,4-dichlorophenyl         acetic acid, 1mL, 200ug/mL,         MeOH         ItemCode / ItemName         32049 / Herbicide, 8000         series, 515 Surrogate [free         acid] 2,4-dichlorophenyl         acetic acid, 1mL, 200ug/mL,         MeOH         ItemCode / ItemName         HBM-8151A / Chlorinated         Herbicide Mixtures, Free         Acids         ItemCode / ItemName         HBM-8151A / Chlorinated         Herbicide Mixtures, Free         Acids         ItemCode / ItemName         HBM-8151A / Chlorinated         Herbicide Mixtures, Free         Acids	32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,       A0184439         ItemCode / ItemName       Lot #         32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,       A0184439         ItemCode / ItemName       Lot #         32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,       A0184439         ItemCode / ItemName       Lot #         32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,       A0184439         MeOH       Lot #         ItemCode / ItemName       Lot #         HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids       0006686742         ItemCode / ItemName       Lot #         HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids       0006686742         HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids       0006686742	ItemCode / ItemNameLot #Date32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/2023MeOHItemCode / ItemNameLot #Expiration Date32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/2023MeOHItemCode / ItemNameLot #Expiration Date32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/2023MeOHItemCode / ItemNameLot #Expiration Date32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/2023MeOHItemCode / ItemNameLot #Expiration DateItemCode / ItemNameLot #Expiration DateHBM-8151A / Chlorinated Herbicide Mixtures, Free Acids000668674212/29/2023ItemCode / ItemNameLot #Expiration DateHBM-8151A / Chlorinated Herbicide Mixtures, Free000668674212/29/2023HBM-8151A / Chlorinated Herbicide Mixtures, FreeLot #Expiration DateHBM-8151A / Chlorinated Herbicide Mixtures, Free000668674212/29/2023HBM-8151A / Chlorinated Herbicide Mixtures, FreeLot #Expiration DateHBM-8151A / Chlorinated Herbicide Mixtures, Free000668674212/29/2023	ItemCode / ItemNameLot #DateOpened By32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/2023AbdulMeOHLot #Expiration DateDate Opened / Opened By32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/202306/16/2023 / AbdulMeOHLot #Expiration DateDate Opened / Opened By32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/202306/16/2023 / AbdulMeOHLot #Expiration DateDate Opened / Opened By32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2,4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/202306/16/2023 / AbdulMeOHLot #Expiration DateDate Opened / Opened ByMeOHLot #Expiration DateDate Opened / 	ItemCode / ItemNameLot #DateOpened ByReceived By32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2.4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/202306/16/2023 / Abdul08/09/2022 / AnkitaMeOHLot #Expiration DateDate Opened / Opened ByReceived Date / Received By32049 / Herbicide, 8000 series, 515 Surrogate [free acid] 2.4-dichlorophenyl acetic acid, 1mL, 200ug/mL,A018443912/16/202306/16/2023 / Abdul08/09/2022 / AnkitaMeOHLot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / AnkitaMeOHLot #Expiration DateDate Opened / Opened By08/09/2022 / AnkitaMeOHLot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / AnkitaMeOHLot #Expiration DateDate Opened / Opened ByReceived Date / Received Date / AnkitaMeOHLot #Expiration DateDate Opened / Opened By02/16/2023 / AbdulMeOHLot #Expiration DateDate Opened / Opened By02/16/2023 / AbdulMeDHLot #Expiration DateDate Opened



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Agilent Technologies	HBM-8151A / Chlorinated Herbicide Mixtures, Free Acids	0006686742	12/29/2023	06/29/2023 / Abdul	02/16/2023 / Abdul	P12410
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32062 / Herbicide Mix, 500/8000, Standard #4 [methyl ester] 200ug/mL, hexane, 1mL/ampul	A0155055	01/05/2024	07/05/2023 / Abdul	07/03/2023 / Abdul	P12616
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32055 / Herbicide Mix, 500/8000, Standard #1 [methyl ester] 200ug/mL, hexane, 1mL/ampul	A192429	01/05/2024	07/05/2023 / Abdul	07/03/2023 / Abdul	P12626
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32050 / Herbicide, 8000 series, 515 Surrogate [ester]	a0143143	12/30/2023	06/30/2023 / Abdul	03/28/2019 / Ankita	P8444
	2,4-dichlorophenyl acetic acid methyl ester, 1mL,					
Supplier		Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Supplier Restek	acid methyl ester, 1mL, 200ug/mL, Hexane ItemCode / ItemName 32050 / Herbicide, 8000 series, 515 Surrogate [ester] 2,4-dichlorophenyl acetic acid methyl ester, 1mL,	Lot # a0143143				
	acid methyl ester, 1mL, 200ug/mL, Hexane ItemCode / ItemName 32050 / Herbicide, 8000 series, 515 Surrogate [ester] 2,4-dichlorophenyl acetic		Date	Opened By 07/05/2023 /	Received By 03/28/2019 /	Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	32254 / Dalapon Methyl Ester, 1000 ug/ml	A0148063	12/30/2023	06/30/2023 / Abdul	08/16/2019 / Stephen	P8825
	1				1	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #



# CERTIFIED REFERENCE MATERIAL

# **Certificate of Analysis**



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

www.restek.com



#### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for

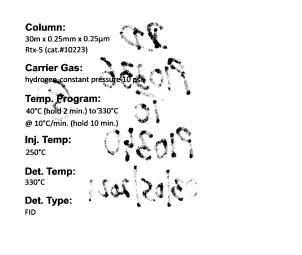
the qualitative and/or quantitative determination of the analyte(s) listed.

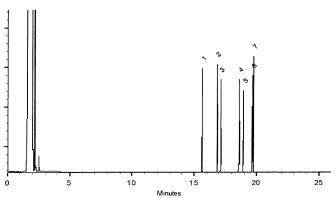
Catalog No. :	32055	Lot No.:	A0165730	r10390
Description :	Herbicide Mix #1/ME (Methyl Ester)			10 - 8
	Herbicide Mix #1/ME (Methyl Ester) 2	200 µg/mL, Hexar	ne, 1mL/ampul	P10340
Container Size :	2 mL	Pkg Amt:	> 1 mL	110210
Expiration Date :	October 31, 2027	Storage:	10°C or colder	03/05/2021
Handling:	This product is photosensitive.	Ship:	Ambient	

#### CERTIFIED VALUES

Elution Order		Compound	Grav. ( (weight/v			Expanded (95% C.L.;	Uncertainty K=2)	
1	Dicamba methyl ester CAS # 6597-78-0 Purity 99%	(Lot 6580100)	200.0	µg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	Dichlorprop methyl es CAS # 57153-17-0 Purity 98%	ter (Lot 8578700)	201.9	µg/mL	+/- +/- +/-	1.4315 6.8141 6.8141	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	2,4-D methyl ester CAS # 1928-38-7 Purity 99%	(Lot 5209600)	202.0	μg/mL	+/- +/- +/-	1.4323 6.8182 6.8182	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	2,4,5-TP (silvex) meth CAS # 4841-20-7 Purity 99%	yl ester (Lot 504400)	202.0	µg/mL	+/- +/- +/-	1.4323 6.8182 6.8182	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
5	2,4,5-T methyl ester CAS # 1928-37-6 Purity 99%	(Lot 6875800)	200.0	μg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
6	Dinoseb methyl ether CAS # 6099-79-2 Purity 99%	(Lot 4362100)	202.0	μg/mL	+/- +/- +/-	1.4323 6.8182 6.8182	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
7	2,4-DB methyl ester CAS # 18625-12-2 Purity 99%	(Lot 6847200)	202.0	μg/mL	+/- +/- +/-	1.4323 6.8182 6.8182	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

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





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.



Date Mixed: 27-Oct-2020 Balance: B707717271

Date Passed: 29-Oct-2020

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

<b>ards,</b> ds.com	lnc.			
Absolute Stand 00-368-1131 www.absolutestandare	Standa	00-368-1131	vww.absolutestandards.com	

**Certified Reference Material CRM** 



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

	51 113 1381 156166	64 93 121	Expanded SDS Information Lot Nominal Purity Uncertainty Target Actual Actual Uncertainty (Solvent Safety Info. On Attached p RM# Number Conc (ug/mL) (%) Purity Weight(g) Weight(g) Conc (ug/mL) (µg/mL) CAS# 0SHA PEL (TWA)	Part Number: 70934 Solvent(s): Lot#		Reviewed B           Expanded           tctual         Uncertainty           ( <i>uy/mL</i> )         ( <i>ug/mL</i> )           ( <i>uy/mL</i> )         ( <i>ug/mL</i> )           Scan 343 (5.996 rr         97           97         97           97         93           77         93           77         113	Actual A Veight(g) Conc Veight(g) Conc 0.01035 1( 0.01035 1( 59 10 59 59 50 50 50 50 50 50 50 50 50 50	weight(g) y Weight(g) y Weight(g) 1 = 50°C (1min.) 1 + 10000 1 + 10000 1 + 10000 1 + 10000 1 + 10000 1 + 10000 2 + 10000	Purity Uncertaii (%) Purity 97.6 0.5 thickness) Temp	Conc (ug/mt) 1000 1000 1000 1000 1000 1000 1000 100	# Number X 0.25mm ID X 0.25mm ID S9170934.D		
200000 64 93 121 51 77 93 121 m/z>0 51 77 113 13&1 156166 20 80 100 120 110 150 00 200 200	64 77 93		$\frac{334 \text{ Bit6100} 1000 \text{ 97.6} 0.5 \text{ 0.01027} 0.01036 \text{ 1008.1} 14.2 \text{ 17640-02.7} \text{ MA}}{14.2 \text{ 17640-02.7} \text{ MA}}$ Alter 2 - Analysis performed by: Melisea Stouiet. In Rate = 1. Analysis performed by: Melisea Stouiet. Tric: (BSB9)70934.D Tric: (BSB9)70934.D Abundance 59 97 (18589)70934.D Abundance 59 97 (18589)70934.D 1600000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 10	Let Muncher: $\underline{O22121}$ Methanic D'Nie-US D'Alber-US			000	55F					
200000 64 93 121 m/z>0 51 77 93 121 m/z>0 51 70 113 136166	64 53		$\frac{934 \text{ Bil 6100} \text{ ioo} \text{ 97.6} \text{ 0.5} \text{ 0.01027} \text{ 0.01035} \text{ 1006.1} \text{ 14.2} \text{ 17640-02.7} \text{ NA}}{142 \text{ 17640-02.7} \text{ NA}}$ All Column:SPB-5 (30m X 0.25mm ID	Lot Number: $\underbrace{02121}{04}$ Lot Number: $\underbrace{02121}{04}$ Methanol DY18-US Pescription: $\underbrace{02121}{04}$ Methanol DY18-US Fermulated By: $\underbrace{Pertinentity and the methy ease.}{Pertinentity in the methy interest By: Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: \underbrace{Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: \underbrace{Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: \underbrace{Pertinentity interest By: Pertinentity interest By: \underbrace{Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: Pertinentity interest By: \underbrace{Pertinentity interest By: Pertinentity interest By: \underbrace{Pertinentity interest By: Pertinentity interest By: Py: Py: Py: Py: Py: Py: Py: Py: Py: P$			UQ.	4000					
200000 64 93 121 m/z>0 51 77 93 121 m/z>0 51 200 100 100 100 100 000 000 000 000 00	64 77 93	400000	$\frac{334 \text{ Bi16100} 1000 \text{ g7.6} 0.5 0.01027 0.01035 1008.1 14.2 17640-02.7 MA}{14.2 17640-02.7 MA}$ Alf: Column:SPB-5 (30m X 0.25mm ID X	Lot Number: $\underbrace{\text{Description:}}_{\text{Description:}}$ $\underbrace{\text{Description:}}_{\text{Description:}$ $\underbrace{\text{Description:}}_{\text{Description:}}$ $\underbrace{\text{Description:}}_{\text{Description:}$ $\underbrace{\text{Description:}}_{\text{Description:}}$ $\underbrace{\text{Description:}}_{\text{Description:}}$ $\text{De$			200	~~~~					
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600000 400000 200000 64 3 121 m/2>0 51 77 93 121 113 1361 156166 200 80 40 100 100 400 500 500 500 500 500 500 500 500 5	64 77 93	60000 40000	$\frac{334 \text{ Bit6100} 1000 \text{ B7.6} 0.5 0.01027 0.01035 1008.1 14.2 17640-02.7 WA}{d. Column:SPB-5 (30m X 0.25mm ID X 0.25mm ID X 0.25mm II m thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B. at Rate = 2. Analysis performed by: Melissa Stoniet. Tric: (BSBB)70934.D Abundance S. Analysis performed by: Resen 343 (5.996 min): [BSB9]70934.D Abundance S. Analysis performed by: Resen 343 (5.996 min): [BSB9]70934.D Abundance S. Analysis performed by: Resen 343 (5.996 min): [BSB9]70934.D Abundance S. Analysis performed by: Resen 343 (5.996 min): [BSB9]70934.D Abundance S. Ab$	Lot Number: $\frac{022121}{Description:}$ $\frac{022121}{Description:}$ $\frac{022121}{Description:}$ $\frac{022121}{Description:}$ $\frac{021213}{Description:}$ $\frac{000}{Description:}$ $\frac{1000}{Description:}$ $1$			2						
600000 400000 200000 64 3 121 m/2>0 51 77 93 121 50 20 100 101 10 100 100 100 100	64 93 121		$\frac{334 \text{ Bil 6100} 1000 \text{ 97.6} 0.5 \text{ 0.01035} 1008.1 \text{ 14.2} 17640-02.7 \text{ MA}}{14.2 17640-02.7 \text{ MA}}$ $47 \text{ Column: SPB -5 (30m X 0.25 \mum film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B. and Rate = 2. Analysis performed by: Melissa Stonier. Tric: [BSB9]70934.D Abundance Scan 343 (5.996 min): [BSB9]70934.D Abundance 59 97 100000 1400000 1400000 1400000 1500000 1500000 1200000 1000000 1200000 1000000 1200000 1000000 1200000 1000000 1000000 1000000 1000000 1000000$	Lot Number: $\frac{02221}{\text{Dialbon methylester}}$ Methanol DY186-US Formulated BY. Frashen Chauhan DV186-US Exploration Exploration methylester (Chauhan constrained by the frashen (Chauhan constrained by the constrained by the frashen (Chauhan constrained by the constrained by the constrained by the constrained by the frashen (Chaina constrained by the constrain			00(	8000					
800000 600000 200000 64 93 121 200000 64 93 121 77 93 121 113 136166 100 100 100 100 100 100 100 100 100 100	64 93 121		$\frac{334 \text{ Bil6100}  1000  97.6  0.5  0.01027  0.01035  1008.1  14.2  17640-02.7  \text{NA}}{41  Column:SPB-5 (30m X 0.25mm ID X 0.$	Lot Number: $\underline{02121}$ Methanol DY186-US Description: $\underline{1281}$ Methanol DY186-US Description: $\underline{02121}$ Methanol DY186-US Description: $\underline{02121}$ Dot Description: $\underline{02121}$ Dot Description: $\underline{02121}$ Description: $\underline{02121}$ Description: $\underline{02121}$ Description: $\underline{02121}$ Description: $\underline{02121}$ Description: $\underline{02121}$ Description: $\underline{021211}$ Description: $\underline{021211}$ Description: $\underline{0212111}$ Description: $\underline{0212111}$ Description: $\underline{0212111}$ Description: $\underline{02121111}$ Description: $\underline{02121111}$ Description: $\underline{02121111}$ Description: $\underline{0212111111111}$ Description: $02121111111111111111111111111111111111$	P12431								
800000 600000 400000 200000 64 77 83 121 131 156166 10 10 10 10 10 10 10 10 10 10 10 10 10	64 93 121		$\frac{34 \text{ B116100} \text{ 1000} \text{ 97.6} \text{ 0.5} \text{ 0.01027} \text{ 0.01035} \text{ 1006.1} \text{ 14.2} \text{ 17640-02.7} \text{ NA}}{14.2 \text{ 17640-02.7} \text{ NA}}$ Af: Column:SPB-5 (30m X 0.25mm ID X 0.25m film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B: In Rate = 2. Analysis performed by: Melissa Stonier. Tric: [BSB9]70934.D Abundance $59  97  97  97  97  70\% \text{ of } 120000  1400000  1400000  1400000  12000000  1200000  1200000  1200000  1200000  12000000  1200000  1200000 $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	<u>َ</u> ک		00	10000					
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1400000 1000000 800000 600000 400000 61 77 80 10 113 13616	64 7 121 121		$\frac{934 \text{ B116100} 1000 \text{ 97.6} 0.5 0.01027 0.01035 1008.1 14.2 17640-02.7 NM}{A1: Column:SPB-5 (30m X 0.25 µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B: an Rate = 2. Analysis performed by: Melissa Stonier. Tric: (BSB9170934.D Abundance 39 97 97 97 97 97 97 97 97 97 97 97 97 97$	Lot Number:     062121 Description:     Methanol     DY186-US       Description:     Datapoin methyl rester     Normal structure       Expiration Date:     062126       mended Storage:     Reingerate (4 °C)       sentration (ug/mL):     1000       NIST Test ID#:     6UTB       SE-05     Balance titerenting       were combined and diturded to (mL):     10.0       Lot     Normal       Lot     000       SE-05       Balance titerenting       Revered By:     Conc (ug/mL)       Normal     Parity       Neer conc (ug/mL)     (N)       Number     Conc (ug/mL)       Revered By:     Conc (ug/mL)       Revered By:     Conc (ug/mL)       Namber     Conc (ug/mL)       Namber     Conc (ug/mL)       Revered By:     Conc (ug/mL)       Revered By:     Conc (ug/mL)       Revered By:     Conc (ug/mL) <t< td=""><td>001AC</td><td></td><td></td><td></td><td></td><td>,0 </td><td></td><td></td><td></td></t<>	001AC					,0 			
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$\frac{1}{20000} + \frac{1}{20000} + \frac{1}{20000} + \frac{1}{200000} + \frac{1}{200000} + \frac{1}{200000} + \frac{1}{200000} + \frac{1}{20} + \frac{1}{21} + \frac{1}{2$	100000 1400000 1200000 1000000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 100000 1000000		934         8116100         1000         97.6         0.5         0.01027         0.01035         1008.1         14.2         17640-02-7         NA           A: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B.         NA           an Rate = 2. Analysis performed by: Melissa Stonier.         TIC: [BSB9]70934.D         Scan 343 (5.996 min): [BSB9]70934.D	Lot Number:       062121       Methanol       DY186-US       Pershant Chauhan       06         Description:       Delapon methyl ester       062126       Prashant Chauhan       0         Expiration Date:       062126       Formulated By:       Prashant Chauhan       0         mended Storage:       Retrigerate (4 °C)       5E-05       Balance Uncertainy       Prashant Chauhan       0         wrete combined and diluted to (mL):       1000       0.003       Fast Uscriainy       Reviewed By:       Pedro L. Rentas       0         wrete combined and diluted to (mL):       10.0       0.003       Fast Uscriainy       Reviewed By:       Pedro L. Rentas       0         wrete combined and diluted to (mL):       10.0       0.003       Fartual       Actual       Actual       Uncertainty       Expanded       Solvent Safety Info. On Attached pg.         wrete combined and diluted to (mL):       (%)       Purity       Weight(g)       Conc (xy/mL)       (H) (yg/mL)       Cost       Solvent Safety Info. On Attached pg.       Disc         Math       Munheir       Conc (kg/mL)       (%)       Purity       Weight(g)       Conc (xy/mL)       (H) (yg/mL)       Cost       Disc       Disc       Disc       Disc       Disc       Disc       Disc       Disc<		'n	59			د ۲			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$e_{1}^{\alpha} = \frac{1}{2} e_{1}^{\alpha} = \frac{1}{2} e_{1$	934         B116100         1000         97.6         0.5         0.01027         0.01035         1008.1         14.2         17640-02-7         NA           A: Column:SPB-5 (30m X 0.25µm fI) Thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B.         Mate = 2.         Analysis performed by: Melissa Stonier.         NA           TIC: [BSB9170934.D         Scan 343 (5.996 min): [BSB9170934.D         Scan 343 (5.996 min): [BSB9170934.D	Lot Number:       062121       Methanol       DY186-US         Description:       Dalapon methyl ester       Formulated By:       Prashart Chauhan       0         Expiration Date:       062126       Formulated By:       Prashart Chauhan       0         mended Storage:       Refrigerate (4°C)       Ferniolated By:       Prashart Chauhan       0         samended Storage:       Refrigerate (4°C)       Ferniolated By:       Prashart Chauhan       0         samended Storage:       Refrigerate (4°C)       Ferniolated By:       Prashart Chauhan       0         samended Storage:       Refrigerate (4°C)       Ecol Balance Uscoration       0       0       0         were combined and diluted to (mL):       10.0       0.003       Flast Uscoration       Reviewed By:       Prashart Chauhan       0         were combined and diluted to (mL):       10.0       0.003       Flast Uscoration       Reviewed By:       Solvent Safety Info. On Attached pg.)       0         Mwere combined and diluted to (mL):       10.0       0.003       Flast Uscoration       14.1 (upmL)       CASH       SOS Information         Mwere combined and diluted to (mL):       1000       9/5       0.01027       0.01027       0.01027       0.0540-027       NA       0 <t< td=""><td></td><td></td><td>JCe</td><td>Abundar</td><td></td><td></td><td></td><td></td><td>0.0</td></t<>			JCe	Abundar					0.0
Abundance $59$ $-\frac{2}{7}$ $-\frac{2}$	Abundance $\int_{9}^{2} \int_{1}^{2} \int_{1$	Abundance $\vec{p}_{1} = \vec{p}_{1} = \vec{p}_{1}$ $\vec{p}_{1} = \vec{p}_{1}$ $\vec{p}_{2} = \vec{p}_{2}$ $\vec{p}_{2} = \vec{p}_{2}$ $\vec{p}_{3} = \vec{p}_{3}$ $\vec{p}_{4} = \vec{p}_{4}$ $\vec{p}_{4} = \vec{p}_{4}$	934         8116100         1000         97.6         0.5         0.01027         0.01035         1008.1         14.2         17640-02-7         NA           4: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B:         an Rate = 2.         Analysis performed by: Melissa Stoniet.	Lot Number:       062121       Methanol       DY186-US       Methanol       DY186-US         Description:       Dalapon methyl ester       062126       Prashamt Chauhan       06         Expiration Date:       062126       Permission (ug/mL):       000       Prashamt Chauhan       06         Intended Storage:       Refrigerate (4 °C)       SE-05 Balance Lincertainty       Reviewed By:       Prashamt Chauhan       06         Intended Storage:       Refrigerate (4 °C)       0.003 Fask Uncertainty       Reviewed By:       Prashamt Chauhan       06         write combined and diluted to (mL):       10.0       0.003 Fask Uncertainty       Reviewed By:       Reviewed By:       Pedro L Rentash       06         Methanol       Lot       Noninal       Purity       Uncertainty       Target       Actual       Methanol       06         Methanol       Lot       0.003 Fask Uncertainty       Target       Actual       Methania       06         Methanol       Lot       0.003 Fask Uncertainty       Target       Actual       Methania       06         Methanol       Lot       0.003 Fast Uncertainty       Target       Actual       Methania       06         Mathanol       Lot       0.003 Fast Uncertainty       Target       <	in): [BSB9]70934 D	Scan 343 (5.996 r					19]70934.D		
Trc: [asser]70934.D Abundance Sea 343 (5.966 min); [BSB9]70934 $ \begin{array}{ccccccccccccccccccccccccccccccccccc$	TC: [BSB9]70934.D Abundance San 343 (5.996 min): [BSB9]70934 $ \begin{array}{ccccccccccccccccccccccccccccccccccc$	Trc: [BSB]70934.D Abundance $5_{97}$ (5.996 min): [BSB9]70934 $a_{1} + b_{1} + b_{2} + b_{2$	934 8116100 1000 97.6 0.5 0.01027 0.01035 1008.1 14.2 17640-02-7 N/A	Lot Number:     062121       Description:     Delapon methyl ester       Description:     Dalapon methyl ester       Expiration Date:     062126       Expiration Date:     062126       Immeded Storage:     Refrigerate (4 °C)       Sentration (µg/mL):     1000       Immeded Storage:     SE-05       Sentration (µg/mL):     1000       Immeded Storage:     SE-05       Sentration (µg/mL):     000       Immeded Storage:     Sentration       Immeded Storage:     Lot       NiST Test ID#:     Lot       Immeded Storage:     Sentration       Immeded Storage:     Sentration       Immeded Storage:     Sentration       Immeded Storage:     Lot       Immeded Storage:     Sentration       Immeded Storage:     Sentration       Immeded Storage:     Sentration       Immeded Storage:     Lot       Immeded Storage:     Lot       Immeded Storage:     Sentration       Immeded Stora	nin., Injector B= 200°C, Detector B = 275°C,	(9min.), Rate = 10°C/	.), Temp 2 = 300°C	0 1 = 50°C (1min.	thickness) Temp	X 0.25μm film lelissa Stonier.	X 0.25mm ID erformed by: M	TIC: IBSF	0 0
<b>RMSD 3.1M:</b> Column: SPB-5 (30m X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C min., Injector B = 209°C. Detector B = 275°C. 100.1.5can Rate = 2. Aunysis performed by: Melisa Stouler. Tro: (essen)roas.t.D Tro: (essen)roas.t.D Tro: (essen)roas.t.D Tro: (essen)roas.t.D Tro: (essen)roas.t.D Tro: (essen)roas.t.D Tro: (essen)roas.t.D Tro: (essen)roas.t.D Abundance Scan 343 (5.996 min.); Rate = 10°C min., Injector B = 200°C. Detector B = 275°C. Tro: (essen)roas.t.D Tro: (essen)r	SMSD-3.M: Column:SP3 (30m X 0.25m ID X 0.25m flm thickness) Tenp 1 = 50°C (1min.), Rate = 10°C/min., Injector B= 200°C. Detector B = 215°C. = 100.1, Scan Rate = 2. Analysis performed by: Milksa Storik. Tric: [aseaprosa.t.D Tric: [aseapros	SMSD3.3.4: Colum::SPB.5 (30n X 0.25mm ID		Lot Number:       062121       Methanol       DY186-US       Methanol       DY186-US         Description:       Dalapon methyl ester       Description       Descr	N/A				97.6			unn:SPB-5 (30m e = 2. Analysis p TIC: rase	6.03
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Description:     Description: <thd< th=""><th><math display="block">\begin{array}{c c} \label{eq:product} \hline Description: Description: Description: Description: Description: Description: Constrained Stronger: The product of the product</math></th><td><math display="block"> \begin{array}{c cccc} \mbox{Description:} &amp; Des</math></td><td>ethyl ester     Eornulated By:     Prashant Chauhan       5(4 °C)     5E-05 Balance Uncertainty     06       10.0     0.003 Flast Uncertainty     06</td><td></td><td>T C</td><td>Formulated</td><td></td><td>incertainity remains</td><td>5E-05 Balance Un 0.003 Flaak Unce</td><td>ethyl ester 6 (4 °C) 10.0</td><td>Delapon m 062126 1000 6UTB 6UTB fituted to (mL): Lot</td><td>Description: iration Date: led Storage: ion (μg/mL): ST Test ID#: e combined and c e combined and c e = 2. Analysis p z = 2. Analysis p</td><td>Expi Expi inal Concentrati inal Concentrati Nit inal Concentrati invi event e.o3</td></thd<>	$\begin{array}{c c} \label{eq:product} \hline Description: Description: Description: Description: Description: Description: Constrained Stronger: The product of the product$	$ \begin{array}{c cccc} \mbox{Description:} & Des$	ethyl ester     Eornulated By:     Prashant Chauhan       5(4 °C)     5E-05 Balance Uncertainty     06       10.0     0.003 Flast Uncertainty     06		T C	Formulated		incertainity remains	5E-05 Balance Un 0.003 Flaak Unce	ethyl ester 6 (4 °C) 10.0	Delapon m 062126 1000 6UTB 6UTB fituted to (mL): Lot	Description: iration Date: led Storage: ion (μg/mL): ST Test ID#: e combined and c e combined and c e = 2. Analysis p z = 2. Analysis p	Expi Expi inal Concentrati inal Concentrati Nit inal Concentrati invi event e.o3

Part # 70934 Lot # 062121

1 of 1

## **Certificate of Analysis**



Date of Release:	2/27/2020
Name:	2,2,4-Trimethylpentane [Isooctane] OmniSolv®
Item No:	TX1389 all size codes
Lot / Batch No:	60059
Country of Origin:	Germany

Characteristic	Re	quirement	Results	Units
	Min.	Max.		
Assay (GC)	99.5		> 99.99	%
Capillary ECD responsive substances (as PCNB)		5	< 0.10	ng/L
Color (APHA)		10	< 10	
Evaporation residue		1	< 0.5	ppm
Filtered through 0.2 µm filter			Passes test	
Fluorescence (as quinine base)		250	67	ppt
Form			Clear liquid	
Infrared Spectrum			Conforms	
Refractive index (at 20 °C)			1.3915	
UV Abs. at 200 nm		1.00	0.125	AU
UV Abs. at 220 nm		0.05	0.014	AU
UV Abs. at 230 nm		0.02	0.003	AU
UV Abs. at 250 nm		0.005	< 0.001	AU
UV Abs. at 270 nm		0.005	< 0.001	AU
UV Abs. at 300 nm		0.005	< 0.001	AU
UV Cut-off		200	<200	nm
Water (H2O)		0.01	0.001	%

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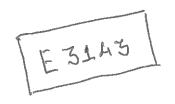
Quality Control Manager

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

EMD Millipore Corporation, an affiliate of Merck KGaA, Darmstadt, Germany 290 Concord Road Billerica, MA 01821

U.S.A

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.



Recd by RP On ?(27/2)

Ether, Anhydrous BAKER ANALYZED® A.C.S. Reagent Contains BHT as a Preservative Suitable for Fat Extraction





Material No.: 9244-03 Batch No.: 0000288039 Manufactured Date: 2021/07/22 Expiration Date: 2023/07/22 Revision No: 1

# **Certificate of Analysis**

Meets ACS Reagent Chemical Requirements,

Test	Specification	Result
Assay ((C2H5)2O) (by GC, corrected for water)	>= 99.0 %	100.0
Alcohol (CzH5OH)	Passes Test	РТ
Carbonyl Compounds (as HCHO) (by polarography)	<≃ 0.001 %	< 0.001
Color (APHA)	<= 10	< 5
Peroxide (as H2O2)	<= 1 ppm	< 1
Preservative (BHT)	>= 7 ppm	9
Residue after Evaporation	<= 0.0010 %	< 0.0010
Fitrable Acid (µeq/g)	<= 0.2	< 0.2
Nater (by KF, coulometric)	<= 0.01 %	0.01

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

Country of Origin:

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Recd. 57 RP ON 9/13/22

ames Techie amie Ethier Vice President Global Quality

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



### **CERTIFICATE OF ANALYSIS**

Product Name	Sodium Hydroxide
Grade	Reagent ACS Grade
Catalog #	289000ACS
ltem #	101007
Batch #	220601-B017657
Date of Manufacture:	04/06/2022
Recommended Retest Date:	04/05/2025
Customer PO #	6051379
Packaging Type	Drum Fiber 50 Kg

TEST	MONO- GRAPH	SPECIFICATION	RESULT	UNITS
Assay	ACS	NLT 97.0%	98.7	%
Calcium (Ca)	ACS	0.005%, max	LT 0.005%	N/A
Chloride (Cl)	ACS	0.005% max.	LT 0.005%	N/A
Heavy Metals (as Ag)	ACS	0.002% max	ĻT 0.002%	N/A
Iron (Fe)	ACS	0.001% max.	LT 0.001%	N/A
Magnesium (Mg)	ACS	0.002% max.	LT 0.002%	N/A,
Mercury (Hg)	ACS	0.1 ppm max.	LT 0.1 ppm	N/A
Nickel (Ni)	ACS	0.001%, max	LT 0.001%	N/A
Nitrogen Compounds (as N)	ACS	0.001% max.	LT 0.001%	N/A
Phosphate (PO4)	ACS	0.001% max.	LT 0.001%	N/A
Potassium (K)	ACS	0.02% max.	LT 0.02%	N/A
Sodium Carbonate (Na2CO3)	ACS	1.0% max.	0.6	%
Sulfate (SO4)	ACS	0.003% max.	LT 0.003%	N/A

#### **Certification and Compliance Statements**

This product is not derived, nor does it come in contact with, any materials derived from bovine or other animal sources.

E3382

Rect. 57 Ri on '08/03/22

www.pharmco.com www.greenfield.com

Form: CofA-Standard, Rev 1.6, 04/13/22, RAD

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E 3412



MIRADOR 201, COL. MIRADOR MONTERREY, N.L. MEXICO CP 64070 TEL +52 81 13 52 57 57 www.pgm.com.mx

# **CERTIFICATE OF ANALYSIS**

	ULFATE CRYSTALS AN	HYDROUS
	E RMB3375)	FORMULA : Na <sub>2</sub> SO <sub>4</sub>
SPECIFICATION NUMBER: 6399		RELEASE DATE: OCT/28/2021
LOT NUMBER : 139404	Description of the second s	
TEST	SPECIFICATION	IS LOT VALUES
Assay (Na <sub>2</sub> SO <sub>4</sub> )	Min. 99.0%	99.8 %
pH of a 5% solution at 25%	5.2 - 9.2	6.0
Insoluble matter	Max. 0.01%	0.005 %
Loss on ignition	Max. 0.5%	0.1%
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO <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%	
Magnesium (Mg)	Max. 0.005%	0.002 %
Potassium (K)	Max. 0.008%	0.001 %
Extraction-concentration suitability	Passes test	0.002 %
Appearance	Passes test	Passes test
dentification	Passes test	Passes test
solubility and foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	Passes test
Retained on US Standard No. 60 sieve		0.2 %
hrough US Standard No. 60 sieve	Min. 94%	97.6 %
	Max. 5%	2.1 %
hrough US Standard No. 100 sieve	Max. 10%	0.2 %
		A. S. S.
	COMMENTS	
		-23
		QC: PhC Irma Belmares

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

Recd. 57 RP on 10/13/22

RE-02-01, Ed. 3

Acetone BAKER RESI-ANALYZED® Reagent For Organic Residue Analysis





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

# **Certificate of Analysis**

Test	Specification	Result
Assay ((CH3)2CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H2O)	≤ 0.5 %	0.3 %
FID-Sensitive Impurities (as 2–Octanol) Single Impurity Peak (ng/mL)	≤ 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	4

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

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

Recd 57 RP On 06/08/23

ames Techie 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 Page 1 of 1 Acetone BAKER RESI-ANALYZED® Reagent For Organic Residue Analysis





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

# **Certificate of Analysis**

Test	Specification	Result
Assay ((CH3)2CO) (by GC, corrected for water)	≥ 99.4 %	99.7 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	≤ 0.3	0.1
Titrable Base (µeq/g)	≤ 0.6	< 0.1
Water (H2O)	≤ 0.5 %	0.3 %
FID–Sensitive Impurities (as 2–Octanol) Single Impurity Peak (ng/mL)	≤ 5	1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	4

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

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

Rect. 57 RS On 6/21/23

E3523

James Techies 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 Page 1 of 1 Hexanes (95% n-hexane) BAKER RESI-ANALYZED® Reagent





Material No.: 9262-03 Batch No.: 23C2462011 Manufactured Date: 2023-03-10 Expiration Date: 2024-06-08 Revision No.: 0

# **Certificate of Analysis**

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)	≤ 5	< 1
ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)	≤ 10	1
ECD-Sensitive Impurities (as Ethylene Dibromide) – Single Impurity Peak (ng/mL)	≤ 5	< 1
Assay (Total Saturated C6 Isomers) (by GC, corrected for water)	≥ 99.5 %	99.7 %
Assay (as n-Hexane) (by GC, corrected for water)	≥ 95 %	97 %
Color (APHA)	≤ 10	5
Residue after Evaporation	≤ 1.0 ppm	0.3 ppm
Substances Darkened by H₂SO₄	Passes Test	Passes Test
Water (by KF, coulometric)	≤ 0.05 %	< 0.01 %

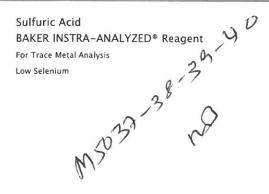
For Laboratory,Research,or Manufacturing Use MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

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

Reed. 57 R? on 6123/23 E 3533



For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700 Avantor Performance Materials, LLC 100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone 610.386.1700 Page 1 of 1







Material No.: 9673-33 Batch No.: 0000250349 Manufactured Date: 2019/12/17 Retest Date: 2024/12/15 Revision No: 1

Test	Specification	Result
ACS – Assay (H <sub>2</sub> SO <sub>4</sub> )	95.0 - 98.0 %	96.5
Appearance	Passes Test	PT
ACS – Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	1
ACS – Substances Reducing Permanganate (as SO2)	<= 2 ppm	< 2
Ammonium (NH4)	<= l ppm	< 1
Chloride (CI)	<= 0.1 ppm	< 0.1
Nitrate (NO3)	<= 0.2 ppm	< 0.1
Phosphate (PO4)	<= 0.5 ppm	< 0.1
Trace Impurities - Aluminum (Al)	<= 30.0 ppb	0.2
Arsenic and Antimony (as As)	<= 4 ppb	< 2
Trace Impurities – Barium (Ba)	<= 10.0 ppb	< 1.0
Trace Impurities – Beryllium (Be)	<= 10.0 ppb	< 1.0
Trace Impurities – Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 10.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 2.0 ppb	< 0.3
Trace Impurities – Calcium (Ca)	<= 50.0 ppb	2.9
Trace Impurities - Chromium (Cr)	<= 6.0 ppb	< 0.4
Trace Impurities - Cobalt (Co)	<= 0.5 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities – Gallium (Ga)	<= 10.0 ppb	< 1.0
Trace Impurities - Germanium (Ge)	<= 10.0 ppb	< 10.0
Trace Impurities - Gold (Au)	<= 10.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 500 ppb	< 100

# Certificate of Analysis

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

Material No.: 9673-33 Batch No.: 0000250349

Test	Specification	Result
Trace Impurities – Iron (Fe)	<= 50.0 ppb	4.1
Trace Impurities - Lead (Pb)	<= 0.5 ppb	< 0.5
Trace Impurities – Lithium (Li)	<= 10.0 ppb	< 1.0
Trace Impurities – Magnesium (Mg)	<= 7.0 ppb	0.4
Trace Impurities – Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities – Mercury (Hg)	<= 0.5 ppb	< 0.4
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 2.0 ppb	< 0.3
Trace Impurities – Niobium (Nb)	<= 10.0 ppb	
Trace Impurities – Potassium (K)	<= 500.0 ppb	< 1.0
Trace Impurities – Selenium (Se)	<= 50.0 ppb	< 2.0
Trace Impurities – Silicon (Si)	<= 100.0 ppb	22.9
Trace Impurities – Silver (Ag)	<= 1.0 ppb	< 10.0
Trace Impurities - Sodium (Na)	<= 500.0 ppb	< 0.3
Trace Impurities – Strontium (Sr)	<= 500.0 ppb	2.7
Trace Impurities – Tantalum (Ta)	<= 3.0 ppb <= 0.0 ppb	< 0.2
Trace Impurities – Thallium (TI)	<= 20.0 ppb	< 5.0
Trace Impurities – Tin (Sn)		< 5.0
Trace Impurities – Titanium (Ti)	<= 5.0 ppb	< 0.8
Trace Impurities – Vanadium (V)	<= 10.0 ppb	< 1.0
Trace Impurities – Zinc (Zn)	<= 10.0 ppb	< 1.0
Trace Impurities – Zirconium (Zr)	<= 5.0 ppb	0.3
	<= 10.0 ppb	< 1.0

For Laboratory, Research or Manufacturing Use

Country of Origin: Packaging Site:

US Phillipsburg Mfg Ctr & DC

James Techie

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

#### Sulfuric Acid

MEZICE ME

# Avantor



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

# Certificate of Analysis

Test	Specification	Result
ACS – Assay (H2SO4)	95.0 - 98.0 %	96.5 %
Appearance	Passes Test	Passes Test
ACS – Color (APHA)	≤ 10	5
ACS – Residue after Ignition	≤ 3 ppm	< 1 ppm
ACS – Substances Reducing Permanganate (as SO2)	≤ 2 ppm	< 2 ppm
Ammonium (NH4)	≤ 1 ppm	< 1 ppm
Chloride (Cl)	$\leq$ 0.1 ppm	< 0.1 ppm
Nitrate (NO3)	$\leq$ 0.2 ppm	< 0.1 ppm
Phosphate (PO4)	$\leq$ 0.5 ppm	< 0.1 ppm
Trace Impurities – Aluminum (Al)	≤ 30.0 ppb	1.7 ppb
Arsenic and Antimony (as As)	$\leq$ 4.0 ppb	< 2.0 ppb
Trace Impurities – Boron (B)	≤ 10.0 ppb	< 5.0 ppb
Trace Impurities - Cadmium (Cd)	$\leq$ 2.0 ppb	< 0.3 ppb
Trace Impurities – Chromium (Cr)	$\leq$ 6.0 ppb	< 0.4 ppb
Trace Impurities - Cobalt (Co)	$\leq$ 0.5 ppb	< 0.3 ppb
Trace Impurities – Copper (Cu)	≤ 1.0 ppb	< 0.1 ppb
Trace Impurities – Gold (Au)	≤ 10.0 ppb	< 0.2 ppb
Heavy Metals (as Pb)	≤ 500.0 ppb	< 100.0 ppb
Trace Impurities – Iron (Fe)	≤ 50.0 ppb	2.0 ppb
Trace Impurities – Lead (Pb)	$\leq$ 0.5 ppb	< 0.5 ppb
Trace Impurities – Magnesium (Mg)	≤ 7.0 ppb	0.6 ppb
Trace Impurities – Manganese (Mn)	$\leq$ 1.0 ppb	< 0.4 ppb
Trace Impurities – Mercury (Hg)	$\leq$ 0.5 ppb	< 0.1 ppb
Trace Impurities – Nickel (Ni)	$\leq$ 2.0 ppb	< 0.3 ppb
Trace Impurities – Potassium (K)	$\leq$ 500.0 ppb	< 2.0 ppb
Trace Impurities – Selenium (Se)	$\leq$ 50.0 ppb	12.1 ppb
Trace Impurities – Silicon (Si)	≤ 100.0 ppb	4.4 ppb
Trace Impurities – Silver (Ag)	≤ 1.0 ppb	< 0.3 ppb

>>> Continued on page 2 >>>

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





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

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

For Laboratory, Research, or Manufacturing Use

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

James Techie

C10 200 1700

Jamie Ethier Vice President Global Quality



Bellefonte, PA 16823-8812

Tel: (800)356-1688 Fax: (814)353-1309

www.restek.com

# CERTIFIED REFERENCE MATERIAL

# **Certificate of Analysis**





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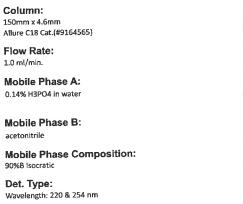
Catalog No. :	32049	Lot No.:	A0184439				
Description :	2,4-Dichlorophenylacetic Acid Standard						
2, 4-Dichlorophenyl Acetic Acid 200µg/mL, Methanol, 1mL/ampul							
Container Size :	2 mL	Pkg Amt:	> 1 mL				
Expiration Date :	January 31, 2025	Storage:	10°C or colder				
Handling:	This product is photosensitive.	Ship:	Ambient				

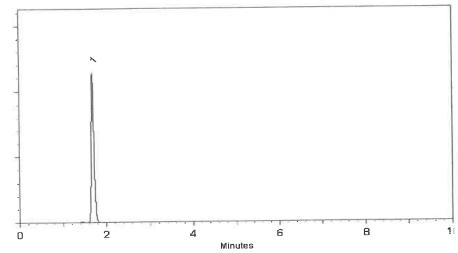
#### CERTIFIED VALUES

Elution Order 1	Compound				Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)			
	2,4-dich CAS # Purity	lorophenylacetic acid 19719-28-9 99%	(Lot S30618V)	200.3	µg/mL	+/- +/- +/-	1.1813 10.6525 10.6704	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed		
Solvent:	Methano CAS # Purity	1 67-56-1 99%		•	1204 J			AJ Declogi	22		
				F	1207	6					

#### Specific Reference Material Notes:

Failure to derivatize this standard will lead to incorrect quantitative results.





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.



Date Mixed: 24-Apr-2022

Balance: 1128342314



Date Passed: 26-Apr-2022

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



Bellefonte, PA 16823-8812

Tel: (800)356-1688 Fax: (814)353-1309

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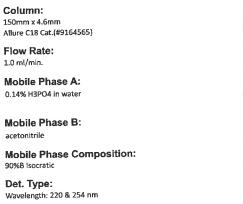
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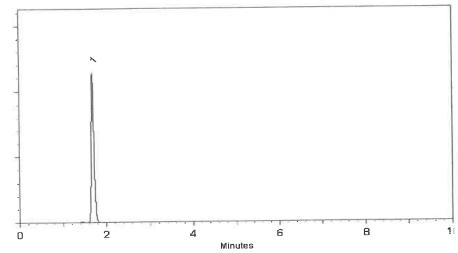
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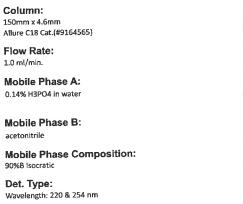
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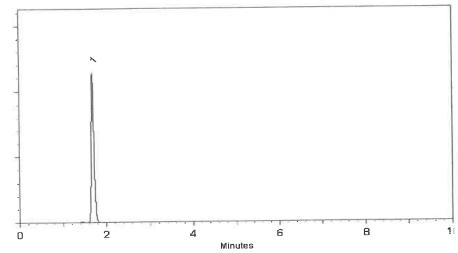
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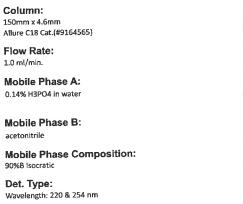
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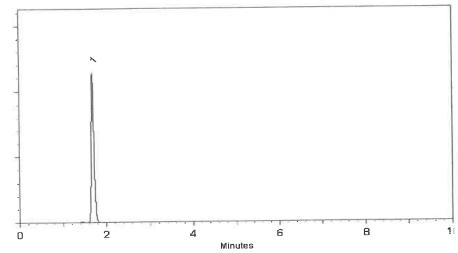
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Elution Order	Compound				Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
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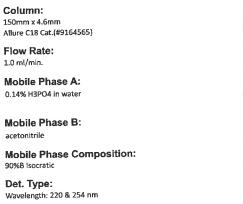
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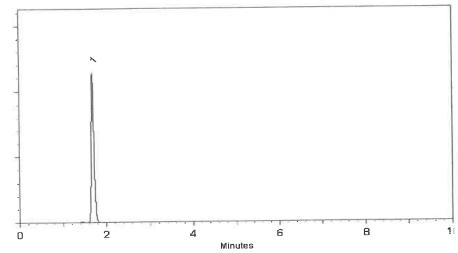
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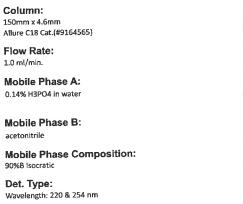
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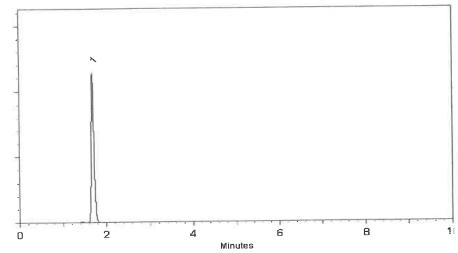
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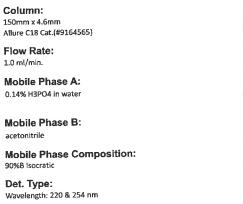
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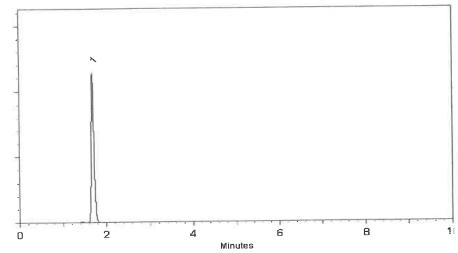
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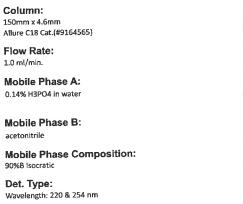
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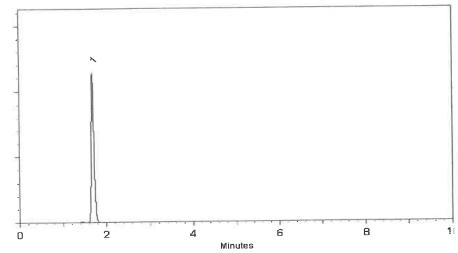
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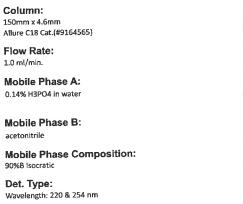
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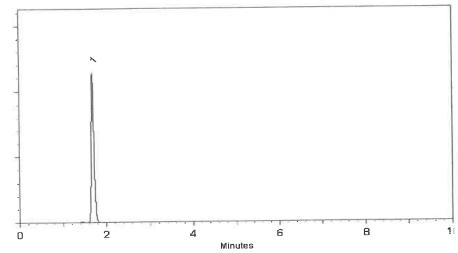
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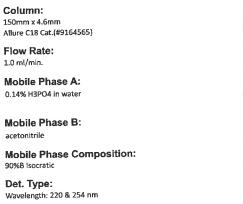
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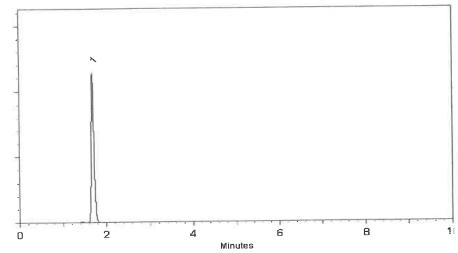
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Balance: 1128342314



Date Passed: 26-Apr-2022



# **ISO 17034**

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

Product Name:	Chlorinated Herbicides Standard	Lot Number:	0006686742
Product Number:	HBM-8151A-1	Lot Issue Date:	13-Jun-2022
Storage Conditions:	Store at Room Temperature (15° to 30°C).	Expiration Date:	31-Jul-2024

	CERT	FIED	VALUES		
Component Name	Concentratio	CAS#	Analyte Lot		
acifluorfen	100.1	±	0.5 µg/mL	050594-66-6	NT02057
bentazon	100.1	±	0.5 µg/mL	025057-89-0	RM19026
chloramben	100.2	±	0.5 µg/mL	000133-90-4	RM03672
2,4-D	100.3	±	0.5 µg/mL	000094-75-7	RM17172
dalapon	100.3	±	0.5 µg/mL	000075-99-0	RM19654
2,4-DB	100.2	±	0.5 µg/mL	000094-82-6	RM02866
tetrachloroterephthalic acid	100.2	±	0.5 µg/mL	002136-79-0	RM13887
dicamba	100.3	±	0.5 µg/mL	001918-00-9	RM15881
3,5-dichlorobenzoic acid	100.2	±	0.5 µg/mL	000051-36-5	RM02768
dichlorprop	100.2	±	0.5 µg/mL	000120-36-5	RM19240
dinoseb	100.3	±	0.5 µg/mL	000088-85-7	RM19863
MCPA	10030	±	50 µg/mL	000094-74-6	RM12220
MCPP (mecoprop)	10026	±	50 µg/mL	000093-65-2	RM09273
4-nitrophenol	100.3	±	0.5 µg/mL	000100-02-7	RM03752
pentachlorophenol	100.2	±	0.5 µg/mL	000087-86-5	RM02474
picloram	100.2	±	0.5 µg/mL	001918-02-1	RM19110
silvex	100.2	±	0.5 µg/mL	000093-72-1	RM19595
2,4,5-T	100.3	±	0.5 µg/mL	000093-76-5	NT01808

Matrix: methanol (methyl alcohol)

### **Description:**

temp. 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:**

Gr.

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 1085

P1222 ISO 17025

Page: 1 of 2

CSD-QA-015.1



### Homogeneity:

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

### Instructions for Use:

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

### Safety:

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

### Intended Use:

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

### Expiration of Certification:

The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is darnaged, 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: OW Monica Bourgeois **QMS** Representative 3 14F 20-20 2-20-20 RM was produced in accordance with the TUV/SUD registered ISO 9001:2015 Quality Management System. Cert# 951215321 A C Page: 2 of 2 www.agilent.com/quality/ ISO 17025 ISO 17034 Cert CSD-QA-015.1 No. AR-1936



# **ISO 17034**

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

Product Name:	Chlorinated Herbicides Standard	Lot Number:	0006686742
Product Number:	HBM-8151A-1	Lot Issue Date:	13-Jun-2022
Storage Conditions:	Store at Room Temperature (15° to 30°C).	Expiration Date:	31-Jul-2024

	CERT	FIED	VALUES		
Component Name	Concentratio	CAS#	Analyte Lot		
acifluorfen	100.1	±	0.5 µg/mL	050594-66-6	NT02057
bentazon	100.1	±	0.5 µg/mL	025057-89-0	RM19026
chloramben	100.2	±	0.5 µg/mL	000133-90-4	RM03672
2,4-D	100.3	±	0.5 µg/mL	000094-75-7	RM17172
dalapon	100.3	±	0.5 µg/mL	000075-99-0	RM19654
2,4-DB	100.2	±	0.5 µg/mL	000094-82-6	RM02866
tetrachloroterephthalic acid	100.2	±	0.5 µg/mL	002136-79-0	RM13887
dicamba	100.3	±	0.5 µg/mL	001918-00-9	RM15881
3,5-dichlorobenzoic acid	100.2	±	0.5 µg/mL	000051-36-5	RM02768
dichlorprop	100.2	±	0.5 µg/mL	000120-36-5	RM19240
dinoseb	100.3	±	0.5 µg/mL	000088-85-7	RM19863
MCPA	10030	±	50 µg/mL	000094-74-6	RM12220
MCPP (mecoprop)	10026	±	50 µg/mL	000093-65-2	RM09273
4-nitrophenol	100.3	±	0.5 µg/mL	000100-02-7	RM03752
pentachlorophenol	100.2	±	0.5 µg/mL	000087-86-5	RM02474
picloram	100.2	±	0.5 µg/mL	001918-02-1	RM19110
silvex	100.2	±	0.5 µg/mL	000093-72-1	RM19595
2,4,5-T	100.3	±	0.5 µg/mL	000093-76-5	NT01808

Matrix: methanol (methyl alcohol)

### **Description:**

temp. 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:**

Gr.

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 1085

P1222 ISO 17025

Page: 1 of 2

CSD-QA-015.1



### Homogeneity:

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

### Instructions for Use:

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

### Safety:

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

### Intended Use:

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

### Expiration of Certification:

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### 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: OW Monica Bourgeois **QMS** Representative 3 14F 20-20 2-20-20 RM was produced in accordance with the TUV/SUD registered ISO 9001:2015 Quality Management System. Cert# 951215321 A C Page: 2 of 2 www.agilent.com/quality/ ISO 17025 ISO 17034 Cert CSD-QA-015.1 No. AR-1936



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

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# **Certificate of Analysis**

**CERTIFIED REFERENCE MATERIAL** 



#### 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. 32062 Catalog No. : Lot No.: A0155055 **Description**: Herbicide Mix #4/ME (Methyl Ester) Herbicide Mix #4/ME (Methyl Ester) 200µg/mL, Hexane/Methyl-tert-butyl-ether, 1mL/ampul Container Size : 2 mL > 1 mL Pkg Amt: **Expiration Date :** November 30, 2026 10°C or colder Storage:

## CERTIFIED VALUES

Elution Order		C	Compound	Grav. (weight/			Expanded (95% C.L.;	Uncertainty K=2)	
1	CAS #	robenzoic acid 2905-67-1 99%	methyl ester (Lot 3903900)	200.0	μg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2		sole 100-17-4 99%	(Lot 24765/7)	200.0	µg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3		oanisole 1825-21-4 99%	(Lot 7921100)	200.0	µg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	CAS #	m methyl ester 7286-84-2 98%	(Lot 6487100)	199.9	µg/mL	+/- +/- +/-	1.4176 6.7480 6.7480	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
5	CAS #	nethyl ester 61592-45-8 99%	(Lot 817100)	200.0	μg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
6		nethyl ester 14143-55-6 98%	(Lot 386-21B)	201.9	µg/mL	+/- +/- +/-	1.4315 6.8141 6.8141	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
7	CAS #	nyl ester (Chlor 1861-32-1 99%	thal-dimethyl) (Lot 8008700)	200.0	µg/mL	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed

8	Acifluorfen methyl ester		200.0 µg/mL	+/- 1.4182	µg/mL	Gravimetric
	CAS # 50594-67-7	(Lot 6282300)		+/- 6.7507	μg/mL	Unstressed
	Purity 99%			+/- 6.7507	µg/mL	Stressed

Solvent: Hexane/Methyl-tert-butyl-ether CAS # 110-54-3/1634-04-4 Purity 99%

**Column:** 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223)

Carrier Gas: hydrogen-constant pressure 10 psi.

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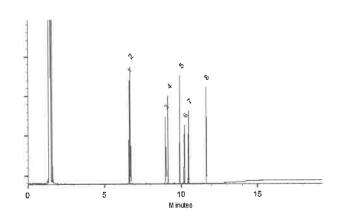
Temp. Program:

75°C (hold 1 min.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°C

Det. Type: FID



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

Date Mixed: 14-Nov-2019 Balance: 1128353505

Date Passed: 18-Nov-2019



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

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# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**

chromatographic plus



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# FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

			etermination of the analyte	
Catalog No. :	32055	Lot No.:	A0192429	267
Description :	Herbicide Mix #1/ME (Methyl Ester)			- 8 4 20
	Herbicide Mix #1/ME (Methyl Ester)	200 µg/mL, Hexan	ne, 1mL/ampul	ي له ا
Container Size :	2 mL	Pkg Amt:	> 1 mL	
Expiration Date :	December 31, 2029	Storage:	10°C or colder	And 23
Handling:	This product is photosensitive.	Ship:	Ambient	
				V GISI

### CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dicamba methyl ester	6597-78-0	11705400	99%	201.6 µg/mL	+/- 3.4204
2	Dichlorprop methyl ester	57153-17-0	11672100	99%	201.4 µg/mL	+/- 3.4170
3	2,4-D methyl ester	1928-38-7	10048000	99%	201.2 μg/mL	+/- 3.4136
4	2,4,5-TP (silvex) methyl ester	4841-20-7	6364900	99%	201.2 μg/mL	+/- 3.4136
5	2,4,5-T methyl ester	1928-37-6	6875800	98%	200.7 μg/mL	+/- 3.4052
6	Dinoseb methyl ether	6099-79-2	12914300	99%	200.8 µg/mL	+/- 3.4068
7	2,4-DB methyl ester	18625-12-2	12542000	99%	201.0 μg/mL	+/- 3.4102

Solvent: Hexane

> CAS # 110-54-3 Purity 99%

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



# **Quality Confirmation Test**

Column: 30m x 0.25mm x 0.25µm Rtx-5 (cat.#10223) Carrier Gas: hydrogen-constant pressure 10 psi. Temp. Program: 40°C (hold 2 min.) to 330°C @ 10°C/min. (hold 10 min.) Inj. Temp: 250°C Det. Temp: 330°C Det. Type: FID Split Vent: 2 ml/min. lnj. Vol 1µľ D 10 20 30 40 Minutes 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. A Right 1128360905 Date Mixed: 09-Dec-2022 Balance Serial # Penelope Riglin - Operations Tech I . . Manufactured under Restek's ISO 9001:2015 Jennifer Pollino - Operations Tech III - ARM QC Date Passed: 12-Dec-2022 **Registered Quality System** Certificate #FM 80397





# CERTIFIED REFERENCE MATERIAL

# **Certificate of Analysis**



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## FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. :	32050	Lot No.:	<u>A0143143</u>	7	AJ
Description :	2,4-Dichlorophenylacetic Acid Methy	yl Ester Standard		P8445	07/29/19
	515 Surrogate (ester) 2, 4-dichlorop 200µg/mL, Hexane, 1mL/ampul	henyl Acetic Acid I	Methyl Ester		Juno
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL		
Expiration Date :	August 31, 2025	Storage:	10°C or colder		
Handling:	This product is photosensitive.				

## CERTIFIED VALUES

Elution Order		Compound			Grav. Conc. (weight/volume)				
1	2,4-Dich CAS # Purity	llorophenyl acetic aci 55954-23-9 99%	d methyl ester (Lot CSC42194-01)	200.0	µg/mL		1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Hexane								

CAS # 110-54-3

Purity 99%

**Column:** 30m x 0.25mm x 0.25μm Rtx-5 (cat.#10223)

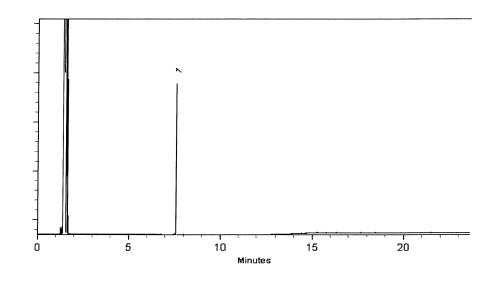
Carrier Gas: hydrogen-constant pressure 10 psi.

**Temp. Program:** 75°C (hold 1 min.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°C

Det. Type: FID



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.

And T. Su Russ Bookhamer - Operations Technician I

### hnician | Date Mixed: 12-Nov-2018

Balance: 1128360905



Date Passed: 13-Nov-2018



# CERTIFIED REFERENCE MATERIAL

# **Certificate of Analysis**



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## FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. :	32050	Lot No.:	<u>A0143143</u>	7	AJ
Description :	2,4-Dichlorophenylacetic Acid Methy	yl Ester Standard		P8445	07/29/19
	515 Surrogate (ester) 2, 4-dichlorop 200µg/mL, Hexane, 1mL/ampul	Methyl Ester		Juno	
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL		
Expiration Date :	August 31, 2025	Storage:	10°C or colder		
Handling:	This product is photosensitive.				

## CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)			
1	2,4-Dich CAS # Purity	llorophenyl acetic ac 55954-23-9 99%	id methyl ester (Lot CSC42194-01)	200.0	μg/mL	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
Solvent:	Hexane		an an Andreas - Anna an Anna Anna Anna Anna Anna Anna			 		

CAS # 110-54-3

Purity 99%

**Column:** 30m x 0.25mm x 0.25μm Rtx-5 (cat.#10223)

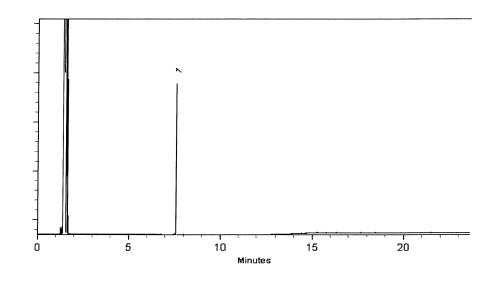
Carrier Gas: hydrogen-constant pressure 10 psi.

**Temp. Program:** 75°C (hold 1 min.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°C

Det. Type: FID



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.

And T. Su Russ Bookhamer - Operations Technician I

### hnician | Date Mixed: 12-Nov-2018

Balance: 1128360905



Date Passed: 13-Nov-2018



# **CERTIFIED REFERENCE MATERIAL**

# **Certificate of Analysis**





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. 

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

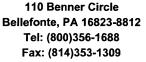
 Lot No.: A0131940

 32062 Catalog No. : **Description :** Herbicide Mix #4/ME (Methyl Ester) Standard #4 (methyl ester) 200µg/mL, Hexane/MTBE(90:10), 1mL/ampul **Container Size :** 2 mL > 1 mL Pkg Amt: **Expiration Date :** October 31, 2024 10°C or colder Storage: P88Ub

# CERTIFIED VALUES

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Elution Order	and the second	Grav. 0 (weight/v			Expanded (95% C.L.			
1	3,5-Dichlorobenzoic a CAS # 2905-67-1 Purity 99%	ncid methyl ester (Lot 3903900)	202.0	18	+/- +/- +/-	1.4323 6.8182 6.8182	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
2	4-Nitroanisole CAS # 100-17-4 Purity 99%	(Lot 24765/7)	200.0	1.9	+/- +/- +/-	1.4182 6.7507 6.7507	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
3	Pentachloroanisole CAS # 1825-21-4 Purity 99%	(Lot 6390100)	201.0		+/- +/- +/-	1.4253 6.7844 6.7844	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
4	Chloramben methyl es CAS # 7286-84-2 Purity 98%	ter (Lot 6487100)	200.9		+/- +/- +/-	1.4245 6.7810 6.7810	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
5	Bentazon methyl ester CAS # 61592-45-8 Purity 99%		202.0		+/-	1.4323 6.8182 6.8182	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
6	Picloram methyl ester CAS # 14143-55-6 Purity 98%	(Lot 459-31B)	200.9		⊦/ <b>_</b>	1.4245 6.7810 6.7810	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed
7	DCPA methyl ester (C. CAS # 1861-32-1 Purity 99%	hlorthal-dimethyl) (Lot 84-92B)	201.0	+	-/ <b>-</b>	1.4253 6.7844 6.7844	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed



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8	Acifluor	fen methyl ester		200.0	µg/mL	+/-	1.4182	μg/mL	Gravimetric
	CAS #	50594-67-7	(Lot 6282300)			+/-	6.7507	μg/mL	Unstressed
	Purity	99%				+/-	6.7507	µg/mL	Stressed

Solvent: Hexane/Methyl-tert-butyl-ether CAS# 110-54-3/1634-04-4 Purity 99%

#### Column: 30m x 0.25mm x 0.25µm

Rtx-5 (cat.#10223)

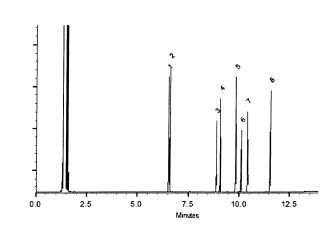
#### Carrier Gas: hydrogen-constant pressure 10 psi.

Temp. Program: 75°C (hold 1 min.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

Det. Temp: 330°C

Det. Type: FID



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.

Cheryl Statan Cheryl Graham - Mix Technician

29-Oct-2017

Balance: B442140311

Date Passed:

Date Mixed:

30-Oct-2017



# **K**<sup>\*</sup> CERTIFIED REFERENCE MATERIAL

# **Certificate of Analysis**



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# FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE. This Reference Material is intended for Laboratory Use Only as a standard for

the qualitative and/or quantitative determination of the analyte(s) listed.

			etermination of the analyte	
Catalog No. :	32254	Lot No.:	<u>A0148063</u>	
Description :	Dalapon methyl ester Standard			56  on  8/16/19
	Dalapon methyl ester 1000µg/mL, Me	ethanol, 1mL/amp	bul	
Container Size :	<u>2 mL</u>	Pkg Amt:	> 1 mL	(1887) 1
Expiration Date :	April 30, 2026	Storage:	10°C or colder	
Handling:	This product is photosensitive.	·····		$ 0$ $\nabla$ $\mathbb{R}$
				1 8000

### CERTIFIED VALUES

Elution Order	Compound				Grav. Conc. (weight/volume)			Expanded Uncertainty (95% C.L.; K=2)		
1	Dalapor CAS # Purity	n methyl ester 17640-02-7 98%	(Lot 1764600)	999.6	µg/mL	+/- +/- +/-	10.0697 34.4896 34.4896	μg/mL μg/mL μg/mL	Gravimetric Unstressed Stressed	

Solvent: Methanol CAS# 67-56-1 Purity 99%

**Column:** 30m x 0.25mm x 0.25μm Rtx-5 (cat.#10223)

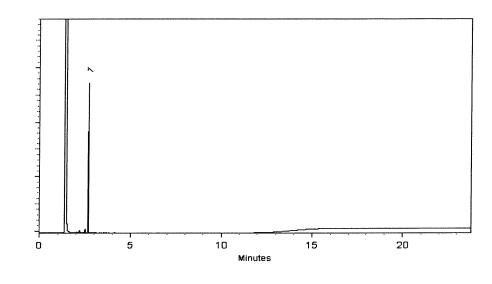
Carrier Gas: hydrogen-constant pressure 10 psi.

**Temp. Program:** 75°C (hold 1 min.) to 330°C @ 20°C/min. (hold 10 min.)

Inj. Temp: 250°C

**Det. Temp:** 330°C

Det. Type: FID



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.

Anna 7. Bu

Russ Bookhamer - Operations Technician I

11-Apr-2019 Balance: 1127510105

Fang-Yun Lo - OC Artistyst

Date Passed: 15-Apr-2019

Date Mixed: