284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900, Fax : 908 789 8922

Prep Standard - Chemical Standard Summary

Order ID : P4368

Test : Gasoline Range Organics

Prepbatch ID :

Sequence ID/Qc Batch ID: FB101024,

Standard ID :
PP23534,PP23535,PP23538,PP23844,PP23845,PP23846,PP23847,PP23848,PP23849,PP23852,PP23853,PP23854,

Chemical ID :
P11121,P9826,V11252,V14143,W3112,

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
231	10 PPM GRO STD 1ST SOURCE	PP23534	07/29/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 07/30/2024

FROM 0.11100ml of P9826 + 9.89000ml of V14143 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
233	10 PPM GRO STD 2nd SOURCE	PP23535	07/29/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 07/30/2024

FROM 0.11100ml of P11121 + 9.89000ml of V14143 = Final Quantity: 10.000 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3619	25 PPM AAA-TFT Surg	PP23538	07/29/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 07/30/2024

FROM 0.10000ml of V11252 + 9.90000ml of V14143 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
238	5 PPB ICC GRO STD	PP23844	10/04/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/07/2024

FROM 5.00000ml of W3112 + 0.00100ml of PP23538 + 0.00250ml of PP23534 = Final Quantity: 5.004 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
237	10 PPB ICC GRO STD	PP23845	10/04/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/07/2024

FROM 5.00000ml of W3112 + 0.00200ml of PP23538 + 0.00500ml of PP23534 = Final Quantity: 5.007 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
239	20 PPB ICC GRO STD	PP23846	10/04/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/07/2024

FROM 5.00000ml of W3112 + 0.00400ml of PP23538 + 0.01000ml of PP23534 = Final Quantity: 5.014 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
235	50 PPB ICC GRO STD	PP23847	10/04/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/07/2024

FROM 5.00000ml of W3112 + 0.01000ml of PP23538 + 0.02500ml of PP23534 = Final Quantity: 5.035 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
234	100 PPB ICC GRO STD	PP23848	10/04/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/07/2024

FROM 5.00000ml of W3112 + 0.02000ml of PP23538 + 0.05000ml of PP23534 = Final Quantity: 5.070 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
240	20 PPB ICV GRO STD	PP23849	10/04/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/07/2024

FROM 5.00000ml of W3112 + 0.00400ml of PP23538 + 0.01000ml of PP23535 = Final Quantity: 5.014 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
241	20 PPB CCC GRO STD	PP23852	10/10/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/14/2024

FROM 5.00000ml of W3112 + 0.00400ml of PP23538 + 0.01000ml of PP23534 = Final Quantity: 5.014 ml

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Pest/Pcb STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
241	20 PPB CCC GRO STD	PP23853	10/10/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/14/2024

FROM 5.00000ml of W3112 + 0.00400ml of PP23538 + 0.01000ml of PP23534 = Final Quantity: 5.014 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
241	20 PPB CCC GRO STD	PP23854	10/10/2024	01/22/2025	Yogesh Patel	None	None	Ankita Jodhani 10/14/2024

FROM 5.00000ml of W3112 + 0.00400ml of PP23538 + 0.01000ml of PP23534 = Final Quantity: 5.014 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30065 / GRO Mix (EPA)	A0161776	01/25/2025	07/25/2024 / yogesh	02/10/2021 / Sohil	P11121

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30065 / GRO Mix (EPA)	A0155991	01/25/2025	07/25/2024 / yogesh	09/11/2020 / DHAVAL	P9826

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30068 / VOA Mix, a, a, a-triflurotoluene 2500uq/ml, P&T methanol, 1ml	A0158026	05/31/2028	11/27/2023 / yogesh	09/11/2020 / DHAVAL	V11252

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	22L0562016	01/22/2025	07/22/2024 / SAM	02/06/2024 / SAM	V14143

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 / Iwona	07/03/2024 / Iwona	W3112

RESTEK® CERTIFIED REFERENCE MATERIAL

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

www.restek.com

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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

Catalog No. : 30065 **Lot No.:** A0161776

Description : Gasoline Range Organics Mix (EPA)

Gasoline Range Organics Mix (EPA) 500 - 1500µg/mL, P&T Methanol, 1mL/ampul

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

Expiration Date : July 31, 2027 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	2-Methylpentane	1,507.0 µg/mL	+/- 8.9511 µg/mL	Gravimetric
	CAS # 107-83-5 (Lot MKCB1674V)		+/- 84.5158 µg/mL	Unstressed
	Purity 99%		+/- 86.4925 µg/mL	Stressed
2	2,2,4-Trimethylpentane (isooctane)	1,511.0 µg/mL	+/- 8.9749 µg/mL	Gravimetric
	CAS # 540-84-1 (Lot SHBF8066V)		+/- 84.7402 µg/mL	Unstressed
	Purity 99%		+/- 86.7221 µg/mL	Stressed
3	n-Heptane (C7)	498.8 µg/mL	+/- 2.9628 µg/mL	Gravimetric
	CAS # 142-82-5 (Lot SHBK8626)		+/- 27.9749 µg/mL	Unstressed
	Purity 98%		+/- 28.6292 µg/mL	Stressed
4	Benzene	500.0 µg/mL	+/- 2.9698 µg/mL	Gravimetric
	CAS # 71-43-2 (Lot SHBK5679)		+/- 28.0411 µg/mL	Unstressed
	Purity 99%		+/- 28.6969 µg/mL	Stressed
5	Toluene	1,510.0 µg/mL	+/- 8.9689 µg/mL	Gravimetric
	CAS # 108-88-3 (Lot MKCH9232)		+/- 84.6841 µg/mL	Unstressed
	Purity 99%		+/- 86.6647 µg/mL	Stressed
6	Ethylbenzene	504.0 µg/mL	+/- 2.9936 µg/mL	Gravimetric
	CAS # 100-41-4 (Lot SHBL0706)		+/- 28.2654 µg/mL	Unstressed
	Purity 99%		+/- 28.9265 µg/mL	Stressed
7	m-Xylene	1,005.0 µg/mL	+/- 5.9694 µg/mL	Gravimetric
	CAS # 108-38-3 (Lot SHBL0265)		+/- 56.3626 µg/mL	Unstressed
	Purity 99%		+/- 57.6808 µg/mL	Stressed

8	o-Xylene		1,007.0	µg/mL	+/-	5.9813	µg/mL	Gravimetric
	CAS #	95-47-6	(Lot SHBK7739)		+/-	56.4747	µg/mL	Unstressed
	Purity	99%			+/-	57.7956	µg/mL	Stressed
9	1,2,4-Trimethylbenzene		1,008.0	µg/mL	+/-	5.9872	µg/mL	Gravimetric
	CAS #	95-63-6	(Lot WXBC4246V)		+/-	56.5308	µg/mL	Unstressed
	Purity	99%			+/-	57.8530	µg/mL	Stressed

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

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

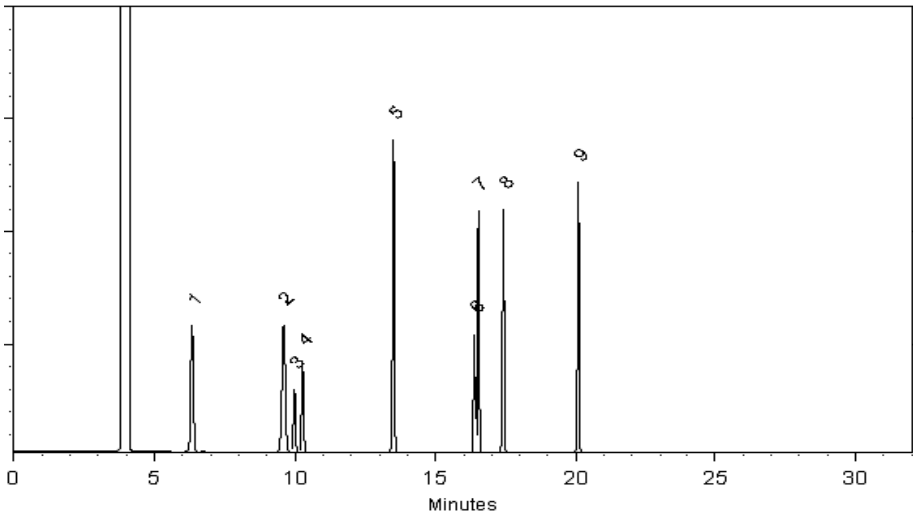
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°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.

Cydnei L. Crust - Mix Technician

Date Mixed: 15-Jun-2020 **Balance:** B251644995

Fang-Yun Lo - QC Analyst

Date Passed: 17-Jun-2020

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

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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

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

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

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

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

Manufacturing Notes:

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

Handling Notes:

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

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis

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Material No.: 9077-02
Batch No.: 22L0562016
Manufactured Date: 2022-10-26
Expiration Date: 2025-10-25
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH_3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

For Laboratory,Research,or Manufacturing Use
Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

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

James T Ethier
Jamie Ethier
Vice President Global Quality