

Spreadsheet Example VCSB 10 ppm Gasoline Sulfur Precision Demonstration [PBMS0008:OMB #2060-0731: Expires 1/31/2024]. This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. OMB Control No 2060-0731. Responses to this collection of information are voluntary 1090 CFR 1360 through 1090 1365. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information is estimated to average 180 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Test Method				
Name of Method:				
Laboratory Identification				
Laboratory Name:				
Laboratory Street Address:				
Laboratory City:				
Laboratory State:				
Laboratory Zip code:				
Laboratory Contact Person:				
Laboratory Contact Phone Number				
Laboratory Contact Facsimile Number				
Laboratory Contact E-mail Address				
<p>10 ppm Sulfur Precision Criterion (§1090.1365(b)) - The maximum allowable standard deviation computed from results of a minimum of 20 tests made over 20 days (You may make up to 4 separate measurements in a 24-hour period, as long as the interval between measurements is at least 4 hours.) on samples using good laboratory practices taken from a single homogenous commercially available gasoline must be less than or equal to 1.5 times the repeatability (r) divided by 2.77, where "r" equals the ASTM repeatability of ASTM D7039-15a(R2020). Example: A 10ppm sulfur gasoline sample: maximum allowable standard deviation of 20 tests less than or equal to $1.5 \times (1.73 \text{ ppm} / 2.77) = 0.94 \text{ ppm}$.</p>				
Is 10 ppm Sulfur Precision Criterion Met?		REQUIRED DATA MISSING		
Standard Deviation		REQUIRED DATA MISSING		
Laboratory Test Identification Number	Date	Time	Test Result (ppm)	Data Entry QC Check on Test Result
				DATA REQUIRED IN CELL D18
				DATA REQUIRED IN CELL D19
				DATA REQUIRED IN CELL D20
				DATA REQUIRED IN CELL D21
				DATA REQUIRED IN CELL D22
				DATA REQUIRED IN CELL D23
				DATA REQUIRED IN CELL D24
				DATA REQUIRED IN CELL D25
				DATA REQUIRED IN CELL D26
				DATA REQUIRED IN CELL D27
				DATA REQUIRED IN CELL D28
				DATA REQUIRED IN CELL D29
				DATA REQUIRED IN CELL D30
				DATA REQUIRED IN CELL D31
				DATA REQUIRED IN CELL D32
				DATA REQUIRED IN CELL D33

0.938443

				DATA REQUIRED IN CELL D34
				DATA REQUIRED IN CELL D35
				DATA REQUIRED IN CELL D36
				DATA REQUIRED IN CELL D37

Spreadsheet Example VCSB 10 ppm Gasoline Sulfur Accuracy Demonst

Test Method

Name of Method:	0
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Laboratory Identification

Laboratory Name:	0
Laboratory Street Address:	0
Laboratory City:	0
Laboratory State:	0
Laboratory Zip code:	0
Laboratory Contact Person:	0
Laboratory Contact Phone Number:	0
Laboratory Contact Facsimile Number:	0
Laboratory Contact E-mail Address:	0

1 to 10 ppm Accuracy Criterion (§1090.1365(c)(3)(i)) - the arithmetic average performed on a commercially available gravimetric sulfur standard in the range that differ from the accepted reference value (ARV) of that standard by more than 10% and is not compensated for any known chemical interferences. You may omit any of the standards in that range.

Accuracy Criterion for 1-10 ppm gravimetric sulfur standard

Is 1-10 ppm Sulfur Accuracy Criterion Met?	REQUIRED DATA MISSING		
Arithmetic Average (ppm)	REQUIRED DATA MISSING		
Vendor Name of Gravimetric Standard			
Lot Identification Number of Gravimetric Standard			
Accepted Reference Value (ARV) of Gravimetric Standard (ppm)			
Difference between Arithmetic Average and ARV of Gravimetric Standard	REQUIRED DATA MISSING		
Laboratory Test Identification Number	Date	Time	Test Result (ppm)

ge of a continuous series of at least 10 tests
e of 1 to 10 ppm sulfur, say 10 ppm., shall not
0.70 ppm. Individual test results shall be
:se ranges if you do not perform testing with fuel

10 to 20 ppm Accuracy Criterion
on a commercially available gravimetric
accepted reference value (ARV) c
chemical interferences. You may

Ac

Is 10-20 ppm Sulfur Accuracy Criterion Met?
Arithmetic Average (ppm)
Vendor Name of Gravimetric Standard
Lot Identification Number of Gravimetric Standard
Accepted Reference Value (ARV) of Gravimetric Standard (ppm)
Difference between Arithmetic Average and ARV of Gravimetric Standard
Laboratory Test Identification Number

Concentration QC Check on ARV
ARV TOO LOW IN CONCENTRATION

Data Entry QC Check on Test Result
DATA REQUIRED IN CELL D26
DATA REQUIRED IN CELL D27
DATA REQUIRED IN CELL D28
DATA REQUIRED IN CELL D29

DATA REQUIRED IN CELL D30
DATA REQUIRED IN CELL D31
DATA REQUIRED IN CELL D32
DATA REQUIRED IN CELL D33
DATA REQUIRED IN CELL D34
DATA REQUIRED IN CELL D35

n (§1090.1365(c)(3)(i)) - the arithmetic average of a continuous series of at least 10 tests performed metric sulfur standard in the range of 10 to 20 ppm, say 20 ppm. sulfur shall not differ from the of that standard by more than 1.02 ppm. Individual test results shall be compensated for any known omit any of these ranges if you do not perform testing with fuel in that range.

<u>Accuracy Criterion for 10-20 ppm</u>			
<u>gravimetric sulfur standard</u>			
REQUIRED DATA MISSING			
REQUIRED DATA MISSING			
			Concentration QC Check on ARV
			ARV TOO LOW IN CONCENTRATION
REQUIRED DATA MISSING			
Date	Time	Test Result (ppm)	Data Entry QC Check on Test Result
			DATA REQUIRED IN CELL J26
			DATA REQUIRED IN CELL J27
			DATA REQUIRED IN CELL J28
			DATA REQUIRED IN CELL J29

			DATA REQUIRED IN CELL J30
			DATA REQUIRED IN CELL J31
			DATA REQUIRED IN CELL J32
			DATA REQUIRED IN CELL J33
			DATA REQUIRED IN CELL J34
			DATA REQUIRED IN CELL J35

21 to 95 ppm Accuracy Criterion (§1090.1365(c)(3)(i)) - the arithmetic performed on a commercially available gravimetric sulfur standard in the from the accepted reference value (ARV) of that standard by more than for any known chemical interferences. You may omit any of these range

Accuracy Criterion for 21-95 ppm gravimetric sulfur standard			
Is 10-20 ppm Sulfur Accuracy Criterion Met?	REQUIRED DATA MISSING		
Arithmetic Average (ppm)	REQUIRED DATA MISSING		
Vendor Name of Gravimetric Standard			
Lot Identification Number of Gravimetric Standard			
Accepted Reference Value (ARV) of Gravimetric Standard (ppm)			
Difference between Arithmetic Average and ARV of Gravimetric Standard	REQUIRED DATA MISSING		
Laboratory Test Identification Number	Date	Time	Test Result (ppm)

average of a continuous series of at least 10 tests
range of 21 to 95 ppm, say 80 ppm. sulfur shall not differ
2.16 ppm. Individual test results shall be compensated
as if you do not perform testing with fuel in that range.

Concentration QC Check on ARV
ARV TOO LOW IN CONCENTRATION

Data Entry QC Check on Test Result
DATA REQUIRED IN CELL J26
DATA REQUIRED IN CELL J27
DATA REQUIRED IN CELL J28
DATA REQUIRED IN CELL J29

DATA REQUIRED IN CELL J30
DATA REQUIRED IN CELL J31
DATA REQUIRED IN CELL J32
DATA REQUIRED IN CELL J33
DATA REQUIRED IN CELL J34
DATA REQUIRED IN CELL J35

Spreadsheet Example VCSB 10 ppm Gasoline Sulfur Precision Demonstration [PBM]

Test Method	
Name of Method:	Total Sulfur in Liquid Aromatic Hydrocarbon
Laboratory Identification	
Laboratory Name:	USEPA National and Vehicle Fuels Emission
Laboratory Street Address:	2565 Plymouth Road, Mailcode AATSG
Laboratory City:	Ann Arbor
Laboratory State:	Michigan
Laboratory Zip code:	48105
Laboratory Contact Person:	John Doe
Laboratory Contact Phone Number:	xxx-xxx-xxxx
Laboratory Contact Facsimile Number:	xxx-xxx-xxxx
Laboratory Contact E-mail Address:	FuelsProgramSupport@epa.gov

10 ppm Sulfur Precision Criterion (§1090.1365(b)) - The maximum allowable standard deviation (based on 20 tests per week and 2 or fewer tests per day) on samples using good laboratory practice is less than or equal to 1.5 times the repeatability (r) divided by 2.77, where "r" equals the ASME maximum allowable standard deviation of 20 tests less than or equal to $1.5 \times (1.73 \text{ ppm} / 2.77) =$

Is 10 ppm Sulfur Precision Criterion Met?	PASSED		
standard deviation	0.04		
Laboratory Test Identification Number	Date	Time	Test Result (ppm)
#####	3/26/2021	8:00 AM	6.003
#####	3/29/2021	8:01 AM	6.021
#####	3/30/2021	8:20 AM	6.043
#####	3/31/2021	8:23 AM	5.993
#####	4/1/2021	8:00 AM	6.003
#####	4/2/2021	8:00 AM	6.092
#####	4/3/2021	8:20 AM	6.101
#####	4/4/2021	8:20 AM	6.045
#####	4/5/2021	8:00 AM	6.003
#####	4/8/2021	8:01 AM	6.021
#####	4/9/2021	8:20 AM	5.989
#####	4/10/2021	8:00 AM	5.962
#####	4/11/2021	8:00 AM	6.010
#####	4/12/2021	8:01 AM	6.032
#####	4/15/2021	8:20 AM	6.053
#####	4/16/2021	8:01 AM	6.050
#####	4/17/2021	8:00 AM	5.989
#####	4/18/2021	8:00 AM	6.033
#####	4/19/2021	8:01 AM	5.939
#####	4/22/2021	8:20 AM	6.042

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eviation computed from results of a minimum of 20 tests made over 20 days (7 or
ices taken from a single homogenous commercially available gasoline must be
STM repeatability of ASTM D7039-13. Example: A 10ppm sulfur gasoline sample:
0.94ppm. §1090.1350(a)(2), §1090.1360(a)(2) & §1090.1365(b)(3) Table 1.

Data Entry QC Check on Test Result

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

OK

Spreadsheet Example VCSB 10 ppm Gasoline Sulfur Accuracy Demonstration [PBMS0

Test Method	
Name of Method:	Total Sulfur in Liquid Aromatic Hydrocarbons a
Laboratory Identification	
Laboratory Name:	USEPA National and Vehicle Fuels Emissions I
Laboratory Street Address:	2565 Plymouth Road, Mailcode AATSG
Laboratory City:	Ann Arbor
Laboratory State:	Michigan
Laboratory Zip code:	48105
Laboratory Contact Person:	John Doe
Laboratory Contact Phone Number	xxx-xxx-xxxx
Laboratory Contact Facsimile Number	xxx-xxx-xxxx
Laboratory Contact E-mail Address	FuelsProgramSupport@epa.gov

1 to 10 ppm Accuracy Criterion (§1090.1365(c)(3)(i)) - the arithmetic average of a continuous series of test results performed on a commercially available gravimetric sulfur standard in the range of 1 to 10 ppm shall not differ from the accepted reference value (ARV) of that standard by more than 0.70 ppm. Individual test results shall be compensated for any known chemical interferences. You may omit any of these ranges if you do not test in that range.

Accuracy Criterion for 1-10 ppm			
gravimetric sulfur standard			
Is 1-10 ppm Sulfur Accuracy Criterion Met?	PASSED		
Arithmetic Average (ppm)	7.95		
Vendor Name of Gravimetric Standard	NIST		
Lot Identification Number of Gravimetric Standard	ALDS45680		
Accepted Reference Value (ARV) of Gravimetric Standard (ppm)	8.00		
Difference between Arithmetic Average and ARV of Gravimetric Standard	0.0515		
Laboratory Test Identification Number	Date	Time	Test Result (ppm)
#####	4/23/2021	8:00 AM	7.341
#####	4/23/2021	8:05 AM	7.562
#####	4/23/2021	8:10 AM	7.894
#####	4/23/2021	8:15 AM	8.219
#####	4/23/2021	8:20 AM	8.234
#####	4/23/2021	8:25 AM	8.100
#####	4/23/2021	8:30 AM	8.114

#####	4/23/2021	8:35 AM	7.989
#####	4/23/2021	8:40 AM	7.687
#####	4/23/2021	8:45am	8.345

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and Their Derivatives by XRF
Laboratory/OAR

us series of at least 10 tests
 1 sulfur, say 10 ppm., shall not
 /idual test results shall be
 J do not perform testing with fuel

10 to 20 ppm Accuracy Criterion (§1090.1365(c)(3)(i)) - the at
 least 10 tests performed on a commercially available gravimetric
 say 20 ppm. sulfur shall not differ from the accepted reference v
 ppm. Individual test results shall be compensated for any know
 these ranges if you do not perform testing with fuel in that range

**Accuracy Criterion for 10-20 ppm
 gravimetric sulfur standard**

Is 10-20 ppm Sulfur Accuracy Criterion Met?	PASSED
Arithmetic Average (ppm)	13.91
Vendor Name of Gravimetric Standard	NIST
Lot Identification Number of Gravimetric Standard	ALDS53481
Accepted Reference Value (ARV) of Gravimetric Standard (ppm)	13.50
Difference between Arithmetic Average and ARV of Gravimetric Standard	0.4074999999999999!

Concentration QC Check on ARV
OK

Data Entry QC Check on Test Result
OK
OK
OK
OK
OK
OK
OK

Laboratory Test Identification Number	Date	Time
#####	4/26/2021	8:00 AM
#####	4/26/2021	8:05 AM
#####	4/26/2021	8:10 AM
#####	4/26/2021	8:15 AM
#####	4/26/2021	8:20 AM
#####	4/26/2021	8:25 AM
#####	4/26/2021	8:30 AM

OK
OK
OK

#####	4/26/2021	8:35 AM
#####	4/26/2021	8:40 AM
#####	4/26/2021	8:45am

arithmetic average of a continuous series of at least 10 tests performed on a commercially available gravimetric sulfur standard in the range of 10 to 20 ppm, shall not differ from the accepted reference value (ARV) of that standard by more than 1.02 percent. You may omit any of these ranges if you do not perform testing with fuel in that range.

	Concentration QC Check on ARV
	OK
99	
Test Result (ppm)	Data Entry QC Check on Test Result
13.239	OK
14.231	OK
13.899	OK
14.035	OK
14.001	OK
13.980	OK
13.211	OK

21 to 95 ppm Accuracy Criterion (§1090.1365(c)(3)(i)) - the arithmetic average of at least 10 tests performed on a commercially available gravimetric sulfur standard in the range of 10 to 20 ppm, shall not differ from the accepted reference value (ARV) of that standard by more than 1.02 percent. You may omit any of these ranges if you do not perform testing with fuel in that range.

Accuracy Criterion for 21-95 ppm gravimetric sulfur standard		
Is 21-95 ppm Sulfur Accuracy Criterion Met?	PASSED	
Arithmetic Average (ppm)	79.99	
Vendor Name of Gravimetric Standard	NIST	
Lot Identification Number of Gravimetric Standard	ALDS5348	
Accepted Reference Value (ARV) of Gravimetric Standard (ppm)	80.00	
Difference between Arithmetic Average and ARV of Gravimetric Standard	0.01419999999	
Laboratory Test Identification Number	Date	Time
#####	4/27/2021	8:00 AM
#####	4/27/2021	8:05 AM
#####	4/27/2021	8:10 AM
#####	4/27/2021	8:15 AM
#####	4/27/2021	8:20 AM
#####	4/27/2021	8:25 AM
#####	4/27/2021	8:30 AM

14.345	OK
13.678	OK
14.456	OK

#####	4/27/2021	8:35 AM
#####	4/27/2021	8:40 AM
#####	4/27/2021	8:45am

be the arithmetic average of a continuous series of at least 10 test results for a gravimetric sulfur standard in the range of 21 to 95 ppm, and the average value (ARV) of that standard by more than 2.16 percent. Do not allow for known chemical interferences. You may omit any of the test results that are outside of the range.

1	Concentration QC Check on ARV
	OK
99988	
Test Result (ppm)	Data Entry QC Check on Test Result
81.123	OK
80.000	OK
80.000	OK
79.567	OK
80.567	OK
81.000	OK
79.000	OK

78.567	OK
80.034	OK
80.000	OK