OZONE ANALYZER INTERCOMPARISON
Thermo 49c 0427508923

intercomparison place : Bologna
intercomparison operator: Francescopiero Calzolari
Transfer Standard: Thermo 49iPs s/n: 1404860524
Transfer Standard has been evaluated by ENPA on 1900-01-01 with SRP#15 giving
slope of 1.000 and intercept of -0.3
TS has been warmed-up for more then 12 hours and OA has been conditioning at
200ppb for more then 2 hour
OA has been evaluated at the following 9 concentration levels: 0, 15, 25, 50,
75, 80, 100, 125 e 150 ppb

OA and TS condition:
OA 0427508923 BKG=-0.2 ; Coeff=1.010
TS 1404860524 BKG=-0.3 ; Coeff=1.000
intercomparison start : 2024-06-19 07:50 ; intercomparison end : 2024-06-19
15:07
LinregressResult(slope=1.0045866422772365, intercept=0.10656995774577638,
rvalue=0.9999982341419353, pvalue=2.9021077567742324e-53,
stderr=0.00043311584112523145, intercept_stderr=0.035926522968916255)

Linear regression results OAmean = TSmean*slope + intercept:
TS Transfer Standard
OA O3 Analizer

slope   = 1.004587   slope_stderr   = 4.331e-04
intercept   = 0.106570   intercept_stderr = 3.593e-02
rsquare   = 0.999996   covariance   = -4.178e-21

TSmean: TS average [O3] for each calibration step
OAmean: OA average [O3] for each calibration step
Predicted = OAmean*slope + intercept
TSstd: TS standard deviation [O3] for each calibration step
OAstd: OA standard deviation [O3] for each calibration step
Residual = TS - predicted
Deviation = OA - TS

TSmean	TSstd	OAmean	OAstd	predicted	residual	deviation
0.073	0.207	0.070	0.110	0.177	-0.104	-0.003
74.672	0.102	74.030	0.195	74.476	0.196	-0.642
149.729	0.102	149.120	0.098	149.911	-0.181	-0.609
124.662	0.090	124.070	0.127	124.746	-0.084	-0.592
24.707	0.104	24.560	0.156	24.779	-0.072	-0.147
99.715	0.076	99.180	0.154	99.741	-0.027	-0.535
79.666	0.087	79.250	0.163	79.720	-0.054	-0.416
49.688	0.125	49.360	0.150	49.693	-0.005	-0.328
14.690	0.100	14.530	0.110	14.703	-0.013	-0.160
99.737	0.094	99.090	0.122	99.651	0.086	-0.647
149.704	0.078	148.920	0.166	149.710	-0.005	-0.784
0.131	0.096	0.050	0.112	0.157	-0.026	-0.081
49.622	0.082	49.150	0.102	49.482	0.140	-0.472
24.702	0.163	24.470	0.100	24.689	0.014	-0.232
99.704	0.083	98.970	0.110	99.531	0.173	-0.734
124.693	0.129	123.960	0.150	124.635	0.058	-0.733
14.713	0.110	14.490	0.114	14.663	0.050	-0.223
74.687	0.061	74.250	0.102	74.697	-0.010	-0.437
99.699	0.071	99.200	0.110	99.762	-0.063	-0.499
79.687	0.094	79.230	0.185	79.700	-0.013	-0.457
0.096	0.121	0.050	0.102	0.157	-0.060	-0.046

Unoise: OAstd average   = 0.130
Ulinearity: Residual standard deviation   = 0.092
Urepeat = sqrt(Unoise^2 + Ulinearity^2)   = 0.160

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Udrift = sqrt(0.58^2+(0.0025*C)^2)                          = 0.632
U = sqrt(Urepeat^2+Udrift^2)                                = 0.651
C                                                           = 100.0


compensation equation to obtain unbiased concentration
[O3unbiased]=([OA]*1.005)+0.107
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Intercomparison 49c s/n 0427508923 date : 20240619