Summary statistics EMEP laboratory intercalibration Round 29

Sulphur dioxide in absorbing solution (A-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
A2	SO2	µg S/ml	17	0.367	0.351	0.367	0.061	17.3
A3	SO2	µg S/ml	17	0.45	0.444	0.45	0.065	14.6
A4	SO2	µg S/ml	17	0.2	0.21	0.2	0.068	32.3
A5	SO2	µg S/ml	17	0.16	0.156	0.161	0.031	19.5

Sulphur dioxide and nitric acid on impregnated filters (B-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
B1	SO2	ug S/filter	17	12	11.687	12.01	1.143	9.8
B2	SO2	ug S/filter	17	14.03	13.483	13.796	1.493	11.1
B3	SO2	ug S/filter	17	88.17	85.222	86.78	16.009	18.8
B4	SO2	ug S/filter	17	68.13	67.791	68.213	12.587	18.6
B1	HNO3	ug N/filter	18	9.8	9.447	9.746	1.635	17.3
B2	HNO3	ug N/filter	18	11.45	11.263	11.54	1.359	12.1
B3	HNO3	ug N/filter	17	35.99	34.694	35.225	4.915	14.2
B4	HNO3	ug N/filter	17	27.81	27.608	27.575	2.334	8.5

Nitrogen dioxide in absorbing solution (C-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
C1	NO2	ug N/ml	31	0.087	0.085	0.084	0.007	7.8
C2	NO2	ug N/ml	30	0.072	0.073	0.071	0.006	8.5
C3	NO2	ug N/ml	31	0.116	0.113	0.114	0.009	8.3
C4	NO2	ug N/ml	31	0.145	0.143	0.143	0.009	6.5

Ammonia on impregnated filters (J-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
J1	NH3	ug N/filter	19	16	15.758	15.64	1.214	7.7
J2	NH3	ug N/filter	20	24.1	22.698	23.517	2.651	11.7
J5	NH3	ug N/filter	20	31.5	31.288	31.512	2.301	7.4
J6	NH3	ug N/filter	20	9.52	8.162	8.52	1.97	24.1

Precipitation (G-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
G1	SO4	mg S/l	56	0.859	0.859	0.86	0.043	5.1
G2	SO4	mg S/l	57	1.09	1.096	1.102	0.064	5.8
G3	SO4	mg S/l	57	0.634	0.642	0.64	0.035	5.5
G4	SO4	mg S/l	54	0.771	0.78	0.78	0.033	4.2
G1	NH4	mg N/l	55	0.134	0.138	0.135	0.019	13.7
G2	NH4	mg N/l	54	0.214	0.213	0.211	0.022	10.5
G3	NH4	mg N/l	57	0.267	0.27	0.27	0.023	8.4
G4	NH4	mg N/l	57	0.348	0.352	0.35	0.027	7.6
G1	NO3	mg N/l	55	0.27	0.269	0.27	0.016	6.0
G2	NO3	mg N/l	56	0.352	0.352	0.352	0.02	5.7
G3	NO3	mg N/l	56	0.415	0.415	0.414	0.023	5.5
G4	NO3	mg N/l	58	0.607	0.609	0.607	0.043	7.0
G1	Na	mg/l	55	0.268	0.261	0.26	0.022	8.6
G2	Na	mg/l	54	0.208	0.2	0.201	0.018	8.8
G3	Na	mg/l	56	0.318	0.311	0.311	0.023	7.4
G4	Na	mg/l	57	0.512	0.499	0.505	0.043	8.7
G1	Mg	mg/l	53	0.103	0.103	0.102	0.01	9.3
G2	Mg	mg/l	53	0.093	0.093	0.094	0.008	8.5
G3	Mg	mg/l	55	0.114	0.112	0.112	0.011	9.7
G4	Mg	mg/l	56	0.145	0.145	0.146	0.012	8.3
G1	Cl	mg/l	56	0.193	0.196	0.19	0.037	18.8
G2	Cl	mg/l	55	0.154	0.165	0.153	0.039	23.9
G3	Cl	mg/l	58	0.27	0.275	0.265	0.061	22.2
G4	Cl	mg/l	58	0.347	0.348	0.344	0.069	19.7
G1	Ca	mg/l	54	0.102	0.106	0.102	0.034	32.0
G2	Ca	mg/l	53	0.14	0.142	0.14	0.025	17.4
G3	Ca	mg/l	56	0.204	0.2	0.2	0.028	13.9
G4	Ca	mg/l	56	0.192	0.189	0.19	0.032	17.1
G1	K	mg/l	56	0.136	0.125	0.13	0.031	24.5
G2	K	mg/l	55	0.204	0.194	0.2	0.022	11.3
G3	K	mg/l	55	0.17	0.163	0.167	0.03	18.3
G4	K	mg/l	55	0.238	0.23	0.234	0.027	11.6
G1	pH	pH-unit	54	4.4	4.46	4.45	0.104	2.3
G2	pH	pH-unit	52	4.27	4.329	4.33	0.077	1.8
G3	pH	pH-unit	53	4.7	4.755	4.73	0.083	1.8
G4	pH	pH-unit	52	4.57	4.631	4.61	0.077	1.7
G1	Cond.	uS/cm	52	22	21.535	21.99	1.76	8.2
G2	Cond.	uS/cm	54	29	27.802	28.5	2.442	8.8
G3	Cond.	uS/cm	53	16	16.357	16.5	1.308	8.0
G4	Cond.	uS/cm	53	22	21.283	21.5	1.453	6.8

Heavy metals in precipitation (H-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
H1	As	ug/l	25	0.55	0.482	0.52	0.204	42.3
H2	As	ug/l	26	0.3	0.293	0.283	0.165	56.2
H3	As	ug/l	28	7.5	7.142	7.235	0.884	12.4
H4	As	ug/l	28	5	4.681	4.825	0.781	16.7
H1	Cd	ug/l	26	0.04	0.032	0.037	0.013	41.3
H2	Cd	ug/l	30	0.08	0.074	0.079	0.014	18.4
H3	Cd	ug/l	34	0.7	0.649	0.669	0.088	13.5
H4	Cd	ug/l	35	0.75	0.694	0.71	0.089	12.8
H1	Cr	ug/l	31	0.8	0.835	0.8	0.279	33.4
H2	Cr	ug/l	31	0.85	0.877	0.857	0.275	31.4
H3	Cr	ug/l	34	6.4	6.327	6.405	0.779	12.3
H4	Cr	ug/l	34	5	5.011	5.028	0.594	11.9
H1	Cu	ug/l	32	1.1	0.994	1.1	0.264	26.6
H2	Cu	ug/l	31	0.9	0.835	0.9	0.254	30.4
H3	Cu	ug/l	35	8	7.515	7.6	1.027	13.7
H4	Cu	ug/l	33	6.5	6.269	6.3	0.695	11.1
H1	Pb	ug/l	32	1.5	1.422	1.49	0.362	25.4
H2	Pb	ug/l	33	1.1	1.173	1.13	0.578	49.3
H3	Pb	ug/l	36	21	20.64	20.79	2.05	9.9
H4	Pb	ug/l	36	24.5	23.398	24	1.81	7.7
H1	Ni	ug/l	28	0.75	0.879	0.87	0.159	18.1
H2	Ni	ug/l	28	0.5	0.589	0.556	0.213	36.2
H3	Ni	ug/l	35	9.9	9.69	9.84	1.138	11.7
H4	Ni	ug/l	34	11	10.814	10.8	1.277	11.8
H1	Zn	ug/l	28	4.5	4.386	4.664	0.997	22.7
H2	Zn	ug/l	32	8	7.315	7.8	1.91	26.1
H3	Zn	ug/l	35	105	100.29	103	16.621	16.6
H4	Zn	ug/l	35	100	94.667	96.7	15.007	15.9