Summary statistics EMEP laboratory intercalibration Round 42 - 2024

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	18	19.1	19.36	1.63	8.5
B3	SO2	ug S/filter	17	30.1	22.28	22.80	1.81	8.1
B4	SO2	ug S/filter	18	31.3	30.37	30.66	1.80	5.9
B5	SO2	ug S/filter	18	23.6	26.81	26.90	1.74	6.5
B1	HNO3	ug N/filter	16	17.3	15.91	15.82	0.75	4.7
B3	HNO3	ug N/filter	16	22.9	18.92	18.91	0.95	5.0
B4	HNO3	ug N/filter	17	27.2	25.51	25.63	1.13	4.4
B5	HNO3	ug N/filter	17	18	22.41	22.44	1.40	6.2

Nitrogen dioxide in absorbing solution (C-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
C1	NO2	ug N/ml	23	0.187	0.189	0.19	0.007	3.8
C2	NO2	ug N/ml	24	0.122	0.124	0.123	0.009	7.1
C3	NO2	ug N/ml	24	0.248	0.249	0.254	0.012	4.8
C4	NO2	ug N/ml	23	0.154	0.155	0.156	0.007	4.3

Ammonia on impregnated filters (J-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
J2	NH3	ug N/filter	17	9.52	9.002	9.09	0.921	10.2
J3	NH3	ug N/filter	16	8.72	8.277	8.215	0.551	6.7
J4	NH3	ug N/filter	15	4.51	4.134	4.035	0.351	8.5
J5	NH3	ug N/filter	16	5.81	5.336	5.336	0.649	12.2

Precipitation (G-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
G1	SO4	mg S/l	47	0.33	0.316	0.32	0.021	6.6
G2	SO4	mg S/l	48	0.281	0.269	0.272	0.02	7.6
G3	SO4	mg S/l	47	0.252	0.243	0.249	0.018	7.4
G4	SO4	mg S/l	48	0.236	0.23	0.233	0.018	7.6
G1	NH4	mg N/l	43	0.099	0.101	0.1	0.013	12.5
G2	NH4	mg N/l	45	0.123	0.125	0.123	0.015	11.8
G3	NH4	mg N/l	46	0.195	0.195	0.195	0.018	9.0
G4	NH4	mg N/l	46	0.171	0.171	0.17	0.017	9.9
G1	NO3	mg N/l	50	0.201	0.194	0.195	0.012	6.2
G2	NO3	mg N/l	50	0.295	0.286	0.289	0.015	5.1
G3	NO3	mg N/l	50	0.359	0.348	0.35	0.016	4.5
G4	NO3	mg N/l	50	0.393	0.379	0.381	0.016	4.2
G1	Na	mg/l	45	0.744	0.722	0.725	0.037	5.2
G2	Na	mg/l	47	1.19	1.162	1.161	0.059	5.1
G3	Na	mg/l	45	1.06	1.031	1.044	0.05	4.9
G4	Na	mg/l	46	1.06	1.019	1.025	0.057	5.6
G1	Mg	mg/l	44	0.134	0.131	0.133	0.008	6.4
G2	Mg	mg/l	44	0.114	0.112	0.113	0.008	6.9
G3	Mg	mg/l	46	0.098	0.099	0.099	0.009	9.1
G4	Mg	mg/l	46	0.092	0.092	0.092	0.01	10.7
G1	Cl	mg/l	48	1	0.972	0.972	0.034	3.5
G2	Cl	mg/l	48	1.58	1.53	1.538	0.068	4.4
G3	Cl	mg/l	48	1.43	1.392	1.403	0.058	4.2
G4	Cl	mg/l	48	1.27	1.227	1.239	0.055	4.4
G1	Ca	mg/l	44	0.166	0.154	0.157	0.017	11.4
G2	Ca	mg/l	44	0.14	0.132	0.134	0.011	8.4
G3	Ca	mg/l	46	0.121	0.119	0.116	0.021	17.8
G4	Ca	mg/l	46	0.114	0.11	0.109	0.017	15.7
G1	K	mg/l	45	0.117	0.116	0.117	0.01	8.2
G2	K	mg/l	45	0.181	0.18	0.181	0.01	5.7
G3	K	mg/l	45	0.22	0.219	0.22	0.014	6.6
G4	K	mg/l	45	0.214	0.211	0.214	0.014	6.5
G1	pH	pH units	41	5.48	5.477	5.47	0.117	2.1
G2	pH	pH units	42	5.49	5.463	5.48	0.099	1.8
G3	pH	pH units	44	5.44	5.439	5.435	0.129	2.4
G4	pH	pH units	43	5.45	5.46	5.45	0.125	2.3
G1	Cond	uS/cm	43	9.44	9.701	9.646	0.641	6.6
G2	Cond	uS/cm	43	12	12.028	12	0.58	4.8
G3	Cond	uS/cm	43	12	12.072	12.04	0.667	5.5
G4	Cond	uS/cm	44	11.5	11.651	11.6	0.735	6.3

Heavy metals in precipitation (H-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
H1	As	ug/l	32	0.333	0.353	0.347	0.031	8.7
H2	As	ug/l	30	0.259	0.272	0.266	0.024	8.7
H3	As	ug/l	30	0.555	0.561	0.563	0.033	5.9
H4	As	ug/l	29	0.204	0.209	0.21	0.027	13.0
H1	Cd	ug/l	30	0.022	0.048	0.023	0.128	268.3
H2	Cd	ug/l	32	0.03	0.053	0.031	0.128	239.9
H3	Cd	ug/l	35	0.059	0.078	0.06	0.111	141.9
H4	Cd	ug/l	29	0.018	0.044	0.019	0.122	279.1
H1	Cr	ug/l	30	0.296	0.286	0.295	0.037	13.0
H2	Cr	ug/l	31	0.333	0.321	0.326	0.027	8.3
H3	Cr	ug/l	33	0.592	0.616	0.58	0.284	46.1
H4	Cr	ug/l	30	0.222	0.278	0.225	0.297	107.0
H1	Cu	ug/l	30	0.333	0.32	0.335	0.113	35.2
H2	Cu	ug/l	32	0.37	0.355	0.37	0.136	38.3
H3	Cu	ug/l	33	0.814	0.785	0.8	0.206	26.2
H4	Cu	ug/l	33	0.444	0.436	0.44	0.113	26.0
H1	Pb	ug/l	33	0.37	0.357	0.368	0.056	15.7
H2	Pb	ug/l	36	0.592	0.589	0.58	0.228	38.6
H3	Pb	ug/l	37	1.18	1.151	1.15	0.703	61.1
H4	Pb	ug/l	34	0.333	0.315	0.329	0.088	27.8
H1	Ni	ug/l	33	0.444	0.399	0.446	0.12	30.1
H2	Ni	ug/l	32	0.222	0.508	0.22	1.733	341.0
H3	Ni	ug/l	33	0.592	0.536	0.582	0.153	28.5
H4	Ni	ug/l	32	0.296	0.344	0.3	0.394	114.5
H1	Zn	ug/l	33	3.52	4.654	3.568	6.481	139.3
H2	Zn	ug/l	31	1.85	1.861	1.874	0.312	16.8
H3	Zn	ug/l	34	6.29	6.478	6.305	2.495	38.5
H4	Zn	ug/l	33	2.78	3.025	2.832	1.276	42.2