

Summary statistics EMEP laboratory intercalibration Round 32

Sulphur dioxide in absorbing solution (A-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
A2	SO2	µg S/ml	14	0.22	0.195	0.201	0.036	18.381
A3	SO2	µg S/ml	14	0.1	0.107	0.099	0.046	43.405
A4	SO2	µg S/ml	14	0.6	0.517	0.543	0.102	19.822
A5	SO2	µg S/ml	14	0.54	0.513	0.5	0.115	22.462

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	16	100.2	101.3	98.26	12.24	12.1
B2	SO2	ug S/filter	16	13.22	14.58	13.61	2.38	16.3
B3	SO2	ug S/filter	16	92.17	94.63	92.86	10.27	10.9
B6	SO2	ug S/filter	16	18.84	19.48	18.83	2.13	10.9
B1	HNO3	ug N/filter	16	40.9	41.26	40.74	4.47	10.8
B2	HNO3	ug N/filter	16	10.8	11.10	11.08	1.05	9.5
B3	HNO3	ug N/filter	16	37.63	38.26	37.28	3.72	9.7
B6	HNO3	ug N/filter	16	15.38	15.56	15.36	1.19	7.6

Nitrogen dioxide in absorbing solution (C-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
C1	NO2	ug N/ml	32	0.067	0.07	0.067	0.027	38.423
C2	NO2	ug N/ml	32	0.081	0.083	0.08	0.034	40.587
C3	NO2	ug N/ml	31	0.135	0.132	0.132	0.018	13.985
C4	NO2	ug N/ml	31	0.108	0.105	0.106	0.013	12.785

Ammonia on impregnated filters (J-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
J3	NH3	ug N/filter	36.49	18	35.941	35.657	4.123	11.473
J4	NH3	ug N/filter	16.44	19	16.36	16.35	2.246	13.726
J5	NH3	ug N/filter	12.4	19	12.688	12.9	1.784	14.06
J6	NH3	ug N/filter	38.5	19	37.231	37.565	4.711	12.653

Precipitation (G-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
G1	SO4	mg S/l	58	0.59	0.574	0.585	0.086	14.9
G2	SO4	mg S/l	56	1.716	1.703	1.706	0.077	4.5
G3	SO4	mg S/l	56	0.912	0.897	0.902	0.042	4.7
G4	SO4	mg S/l	57	1.883	1.874	1.885	0.085	4.6
G1	NH4	mg N/l	57	0.134	0.136	0.134	0.021	15.4
G2	NH4	mg N/l	58	0.374	0.38	0.377	0.032	8.4
G3	NH4	mg N/l	58	0.187	0.194	0.19	0.02	10.5
G4	NH4	mg N/l	57	0.401	0.41	0.408	0.034	8.3
G1	NO3	mg N/l	58	0.214	0.21	0.21	0.01	4.7
G2	NO3	mg N/l	59	0.695	0.685	0.685	0.023	3.3
G3	NO3	mg N/l	58	0.335	0.331	0.331	0.012	3.7
G4	NO3	mg N/l	60	0.78	0.775	0.775	0.038	4.9
G1	Na	mg/l	53	0.147	0.137	0.14	0.014	10.2
G2	Na	mg/l	53	0.562	0.543	0.551	0.03	5.5
G3	Na	mg/l	54	0.293	0.281	0.285	0.019	6.8
G4	Na	mg/l	53	0.623	0.608	0.615	0.027	4.4
G1	Mg	mg/l	n/a	n/a	n/a	n/a	n/a	n/a
G2	Mg	mg/l	n/a	n/a	n/a	n/a	n/a	n/a
G3	Mg	mg/l	n/a	n/a	n/a	n/a	n/a	n/a
G4	Mg	mg/l	n/a	n/a	n/a	n/a	n/a	n/a
G1	Cl	mg/l	54	0.116	0.128	0.112	0.083	64.5
G2	Cl	mg/l	58	0.425	0.407	0.411	0.028	6.8
G3	Cl	mg/l	57	0.232	0.22	0.225	0.027	12.2
G4	Cl	mg/l	58	0.463	0.44	0.446	0.036	8.3
G1	Ca	mg/l	50	0.089	0.094	0.09	0.017	17.9
G2	Ca	mg/l	52	0.23	0.226	0.225	0.022	9.8
G3	Ca	mg/l	52	0.115	0.113	0.112	0.023	20.4
G4	Ca	mg/l	52	0.255	0.248	0.248	0.03	12.0
G1	K	mg/l	52	0.102	0.098	0.1	0.021	21.3
G2	K	mg/l	53	0.407	0.404	0.408	0.034	8.5
G3	K	mg/l	53	0.17	0.162	0.164	0.021	12.7
G4	K	mg/l	53	0.509	0.504	0.505	0.039	7.7
G1	pH	pH-unit	49	4.7	4.747	4.75	0.08	1.7
G2	pH	pH-unit	51	4.13	4.172	4.18	0.049	1.2
G3	pH	pH-unit	50	4.4	4.432	4.44	0.048	1.1
G4	pH	pH-unit	51	4.1	4.135	4.14	0.049	1.2
G1	Cond.	µS/cm	51	14.22	13.09	13.32	1.099	8.4
G2	Cond.	µS/cm	52	45.91	42.568	43	2.426	5.7
G3	Cond.	µS/cm	50	24.33	22.991	23.2	1.122	4.9
G4	Cond.	µS/cm	52	50.43	46.63	47.6	2.722	5.8

Heavy metals in precipitation (H-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
H1	As	µg/l	37	11	10.832	10.954	0.761	7.029
H2	As	µg/l	30	0.8	0.77	0.8	0.15	19.443
H3	As	µg/l	34	9	8.945	9	0.568	6.355
H4	As	µg/l	32	1.5	1.444	1.5	0.216	14.935
H1	Cd	µg/l	42	0.7	0.7	0.7	0.05	7.197
H2	Cd	µg/l	36	0.1	0.095	0.1	0.021	21.876
H3	Cd	µg/l	41	0.9	0.887	0.9	0.075	8.456
H4	Cd	µg/l	33	0.09	0.088	0.09	0.012	13.955
H1	Cr	µg/l	40	8.5	8.253	8.4	0.64	7.755
H2	Cr	µg/l	33	0.9	0.884	0.9	0.099	11.25
H3	Cr	µg/l	39	4.5	4.463	4.4	0.543	12.16
H4	Cr	µg/l	31	0.6	0.599	0.6	0.071	11.885
H1	Cu	µg/l	40	15	14.804	14.95	1.155	7.801
H2	Cu	µg/l	29	0.85	0.847	0.826	0.199	23.528
H3	Cu	µg/l	40	12.5	12.363	12.47	0.998	8.072
H4	Cu	µg/l	31	1	0.979	1	0.146	14.912
H1	Pb	µg/l	38	25	24.513	24.9	1.487	6.067
H2	Pb	µg/l	36	2	1.889	1.994	0.275	14.542
H3	Pb	µg/l	40	19.5	19.407	19.6	1.188	6.121
H4	Pb	µg/l	31	0.9	0.902	0.907	0.116	12.821
H1	Ni	µg/l	40	9	8.958	9	0.454	5.073
H2	Ni	µg/l	30	0.8	0.799	0.8	0.11	13.802
H3	Ni	µg/l	40	12	11.963	12	0.995	8.321
H4	Ni	µg/l	33	1.1	1.062	1.1	0.154	14.496
H1	Zn	µg/l	37	130	128.688	128.4	5.518	4.288
H2	Zn	µg/l	38	10	10.155	10.55	1.757	17.301
H3	Zn	µg/l	36	135	135.445	135	7.698	5.683
H4	Zn	µg/l	36	9	9.407	9.24	1.097	11.666