

Statistical summary EMEP laboratory intercalibration Round 30

Sulphur dioxide in absorbing solution (A-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
A1	SO2	µg S/ml	8	0.12	0.114	0.115	0.034	29.5
A2	SO2	µg S/ml	7	0.24	0.226	0.21	0.051	22.7
A4	SO2	µg S/ml	7	0.44	0.427	0.41	0.071	16.6
A5	SO2	µg S/ml	7	0.32	0.308	0.3	0.068	22.2

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

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
B2	SO2	ug S/filter	15	18.55	17.899	17.905	1.268	7.1
B3	SO2	ug S/filter	16	20.751	20.331	19.767	2.259	11.1
B4	SO2	ug S/filter	15	72.14	73.145	71.825	3.825	5.2
B5	SO2	ug S/filter	15	80.15	80.15	79.533	5.628	7.0
B2	HNO3	ug N/filter	13	14.72	14.289	14.245	0.417	2.9
B3	HNO3	ug N/filter	14	16.36	16.039	15.913	0.845	5.3
B4	HNO3	ug N/filter	14	29.45	29.514	29.03	1.549	5.2
B5	HNO3	ug N/filter	13	32.72	31.908	31.987	1.228	3.8

Nitrogen dioxide in absorbing solution (C-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
C1	NO2	ug N/ml	19	0.074	0.074	0.072	0.016	22.3
C2	NO2	ug N/ml	19	0.093	0.094	0.091	0.023	23.9
C3	NO2	ug N/ml	18	0.056	0.054	0.054	0.011	20.3
C4	NO2	ug N/ml	19	0.111	0.111	0.11	0.023	20.5

Ammonia on impregnated filters (J-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
J2	NH3	ug N/filter	20	26.07	25.39	25.265	1.999	7.9
J3	NH3	ug N/filter	19	32.08	31.147	31.17	1.992	6.4
J4	NH3	ug N/filter	20	14.04	14.438	14.384	1.041	7.2
J6	NH3	ug N/filter	20	10.03	9.449	9.665	1.142	12.1

Precipitation (G-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
G1	SO4	mg S/l	53	1.076	1.077	1.072	0.055	5.1
G2	SO4	mg S/l	53	0.987	0.997	0.995	0.058	5.8
G3	SO4	mg S/l	53	0.52	0.528	0.526	0.025	4.7
G4	SO4	mg S/l	54	0.661	0.67	0.667	0.038	5.6
G1	NH4	mg N/l	55	0.187	0.193	0.189	0.019	9.6
G2	NH4	mg N/l	55	0.207	0.211	0.207	0.02	9.5
G3	NH4	mg N/l	56	0.321	0.327	0.325	0.023	6.9
G4	NH4	mg N/l	57	0.326	0.329	0.326	0.023	6.9
G1	NO3	mg N/l	56	0.357	0.355	0.352	0.02	5.6
G2	NO3	mg N/l	56	0.417	0.42	0.417	0.025	5.9
G3	NO3	mg N/l	56	0.484	0.483	0.48	0.028	5.8
G4	NO3	mg N/l	56	0.469	0.467	0.469	0.034	7.4
G1	Na	mg/l	53	0.254	0.253	0.253	0.015	5.9
G2	Na	mg/l	53	0.34	0.335	0.337	0.024	7.0
G3	Na	mg/l	54	0.308	0.303	0.304	0.025	8.4
G4	Na	mg/l	53	0.318	0.314	0.318	0.02	6.3
G1	Mg	mg/l	54	0.114	0.117	0.116	0.013	11.0
G2	Mg	mg/l	54	0.103	0.107	0.106	0.011	10.5
G3	Mg	mg/l	51	0.124	0.128	0.126	0.01	7.7
G4	Mg	mg/l	52	0.134	0.138	0.138	0.009	6.6
G1	Cl	mg/l	52	0.116	0.129	0.115	0.046	35.5
G2	Cl	mg/l	54	0.193	0.196	0.191	0.038	19.6
G3	Cl	mg/l	55	0.309	0.305	0.303	0.03	9.9
G4	Cl	mg/l	54	0.27	0.27	0.269	0.03	11.3
G1	Ca	mg/l	52	0.089	0.097	0.096	0.029	30.3
G2	Ca	mg/l	54	0.128	0.133	0.132	0.027	20.3
G3	Ca	mg/l	54	0.179	0.183	0.18	0.025	13.8
G4	Ca	mg/l	55	0.204	0.21	0.209	0.03	14.3
G1	K	mg/l	55	0.17	0.171	0.169	0.028	16.6
G2	K	mg/l	56	0.238	0.235	0.236	0.032	13.6
G3	K	mg/l	56	0.272	0.267	0.27	0.038	14.1
G4	K	mg/l	56	0.17	0.167	0.17	0.028	16.4
G1	pH	pH-unit	52	4.27	4.326	4.32	0.043	1.0
G2	pH	pH-unit	53	4.33	4.358	4.36	0.053	1.2
G3	pH	pH-unit	52	4.88	4.877	4.89	0.071	1.5
G4	pH	pH-unit	51	4.7	4.736	4.74	0.055	1.2
G1	Cond	µS/cm	50	27.9	27.503	27.9	2.113	7.7
G2	Cond	µS/cm	49	27	26.521	26.7	1.154	4.4
G3	Cond	µS/cm	49	14	14.539	14.6	0.624	4.3
G4	Cond	µS/cm	50	17	17.033	17.1	0.718	4.2

Heavy metals in precipitation (H-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
H1	AS	µg/l	24	0.7	0.689	0.702	0.127	18.4
H2	AS	µg/l	24	0.55	0.529	0.538	0.113	21.3
H3	AS	µg/l	26	6	6.054	6.072	0.526	8.7
H4	AS	µg/l	26	4.5	4.569	4.495	0.37	8.1
H1	Cd	µg/l	29	0.07	0.067	0.07	0.01	14.6
H2	Cd	µg/l	28	0.05	0.047	0.05	0.008	16.2
H3	Cd	µg/l	34	0.55	0.547	0.55	0.032	5.8
H4	Cd	µg/l	36	0.8	0.796	0.8	0.061	7.7
H1	Cr	µg/l	28	0.55	0.553	0.541	0.06	10.9
H2	Cr	µg/l	28	0.6	0.581	0.595	0.047	8.1
H3	Cr	µg/l	35	8.4	8.261	8.2	0.583	7.1
H4	Cr	µg/l	34	7	6.829	6.83	0.485	7.1
H1	Cu	µg/l	32	1.2	1.206	1.224	0.204	16.9
H2	Cu	µg/l	32	1.2	1.327	1.204	0.668	50.3
H3	Cu	µg/l	34	7	6.847	6.9	0.502	7.3
H4	Cu	µg/l	36	5.5	5.466	5.44	0.497	9.1
H1	Pb	µg/l	31	1.2	1.233	1.2	0.178	14.5
H2	Pb	µg/l	33	0.9	0.922	0.893	0.313	33.9
H3	Pb	µg/l	38	23.5	22.629	22.9	2.584	11.4
H4	Pb	µg/l	37	20	19.642	19.6	1.651	8.4
H1	Ni	µg/l	27	0.6	0.594	0.582	0.202	34.0
H2	Ni	µg/l	27	0.8	0.752	0.77	0.097	12.9
H3	Ni	µg/l	36	10.3	10.366	10.3	0.637	6.1
H4	Ni	µg/l	36	9	9.034	8.984	0.781	8.6
H1	Zn	µg/l	31	6	6.32	6.5	1.027	16.2
H2	Zn	µg/l	31	7.5	7.779	7.7	1.193	15.3
H3	Zn	µg/l	34	115	117.817	115.68	7.238	6.1
H4	Zn	µg/l	34	97	99.615	97.8	5.978	6.0