

Summary statistics EMEP laboratory intercalibration Round 40 - 2022

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	18	24	22.9	22.90	1.72	7.5
B3	SO2	ug S/filter	17	20	19.68	19.70	1.76	8.9
B5	SO2	ug S/filter	17	32.1	31.18	31.20	2.16	6.9
B6	SO2	ug S/filter	18	34.1	33.38	33.10	2.39	7.2
B2	HNO3	ug N/filter	17	19.6	18.62	18.60	0.71	3.8
B3	HNO3	ug N/filter	17	16.4	15.99	15.90	0.79	4.9
B5	HNO3	ug N/filter	17	26.2	25.73	25.40	1.31	5.1
B6	HNO3	ug N/filter	17	27.8	27.18	27.00	1.34	4.9

Nitrogen dioxide in absorbing solution (C-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
C1	NO2	ug N/ml	26	0.074	0.076	0.075	0.004	5.7
C2	NO2	ug N/ml	27	0.111	0.113	0.113	0.006	5.5
C3	NO2	ug N/ml	27	0.185	0.187	0.186	0.007	3.5
C4	NO2	ug N/ml	27	0.241	0.244	0.243	0.009	3.6

Ammonia on impregnated filters (J-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
J2	NH3	ug N/filter	17	36.1	35.7	35.6	1.985	5.6
J3	NH3	ug N/filter	16	18.8	18.337	18.15	1.491	8.1
J5	NH3	ug N/filter	17	14.5	14.512	14.4	1.524	10.5
J6	NH3	ug N/filter	17	11.2	11.282	11.1	0.755	6.7

Precipitation (G-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
G1	SO4	mg S/l	53	0.663	0.659	0.658	0.034	5.1
G2	SO4	mg S/l	52	0.477	0.471	0.472	0.028	6.0
G3	SO4	mg S/l	52	0.375	0.369	0.369	0.032	8.7
G4	SO4	mg S/l	51	0.235	0.234	0.231	0.026	11.0
G1	NH4	mg N/l	47	0.241	0.238	0.243	0.029	12.3
G2	NH4	mg N/l	47	0.254	0.252	0.253	0.024	9.6
G3	NH4	mg N/l	45	0.187	0.188	0.187	0.011	6.1
G4	NH4	mg N/l	47	0.174	0.172	0.171	0.017	9.8
G1	NO3	mg N/l	51	0.462	0.455	0.456	0.012	2.7
G2	NO3	mg N/l	53	0.501	0.49	0.492	0.018	3.7
G3	NO3	mg N/l	53	0.346	0.34	0.341	0.016	4.8
G4	NO3	mg N/l	53	0.343	0.334	0.337	0.015	4.4
G1	Na	mg/l	51	0.644	0.629	0.634	0.039	6.1
G2	Na	mg/l	52	0.751	0.736	0.737	0.044	6.0
G3	Na	mg/l	53	0.456	0.445	0.45	0.032	7.1
G4	Na	mg/l	52	0.574	0.561	0.565	0.032	5.8
G1	Mg	mg/l	49	0.32	0.323	0.321	0.019	5.8
G2	Mg	mg/l	49	0.196	0.197	0.196	0.016	8.4
G3	Mg	mg/l	48	0.155	0.154	0.155	0.014	9.0
G4	Mg	mg/l	48	0.093	0.093	0.094	0.009	9.3
G1	Cl	mg/l	54	0.772	0.763	0.756	0.054	7.1
G2	Cl	mg/l	53	0.965	0.929	0.942	0.055	5.9
G3	Cl	mg/l	54	0.579	0.574	0.566	0.094	16.3
G4	Cl	mg/l	53	0.734	0.716	0.717	0.047	6.5
G1	Ca	mg/l	44	0.268	0.259	0.259	0.023	9.0
G2	Ca	mg/l	44	0.243	0.231	0.232	0.028	12.2
G3	Ca	mg/l	44	0.192	0.178	0.179	0.023	13.1
G4	Ca	mg/l	46	0.115	0.112	0.111	0.026	23.1
G1	K	mg/l	51	0.374	0.365	0.365	0.02	5.5
G2	K	mg/l	51	0.475	0.459	0.461	0.028	6.0
G3	K	mg/l	50	0.306	0.298	0.3	0.019	6.3
G4	K	mg/l	48	0.306	0.297	0.296	0.019	6.3
G1	pH	pH-unit	44	5.43	5.453	5.45	0.114	2.1
G2	pH	pH-unit	44	5.45	5.475	5.478	0.102	1.9
G3	pH	pH-unit	46	5.51	5.486	5.495	0.092	1.7
G4	pH	pH-unit	44	5.48	5.483	5.48	0.088	1.6
G1	Cond.	μS/cm	47	14.16	14.225	14.2	1.357	9.5
G2	Cond.	μS/cm	47	13.68	13.606	13.7	0.732	5.4
G3	Cond.	μS/cm	47	9.76	9.901	9.95	0.639	6.5
G4	Cond.	μS/cm	47	9.13	9.343	9.38	0.588	6.3

Heavy metals in precipitation (H-samples)

Sample	Component	Unit	N	Expected value	Mean value	Median	Standard deviation	RSD (%)
H1	Arsenic	µg/l	32	0.18	0.192	0.191	0.022	11.5
H2	Arsenic	µg/l	34	0.429	0.442	0.439	0.04	9.1
H3	Arsenic	µg/l	32	0.315	0.327	0.326	0.026	8.1
H4	Arsenic	µg/l	33	0.219	0.228	0.228	0.025	10.8
H1	Cadmium	µg/l	35	0.032	0.033	0.032	0.009	27.0
H2	Cadmium	µg/l	34	0.023	0.027	0.026	0.007	27.4
H3	Cadmium	µg/l	35	0.025	0.026	0.026	0.006	23.2
H4	Cadmium	µg/l	33	0.029	0.03	0.03	0.009	29.8
H1	Chromium	µg/l	31	0.28	0.294	0.286	0.037	12.4
H2	Chromium	µg/l	31	0.273	0.283	0.28	0.023	8.2
H3	Chromium	µg/l	30	0.228	0.228	0.229	0.043	18.9
H4	Chromium	µg/l	30	0.219	0.224	0.222	0.056	24.9
H1	Copper	µg/l	31	0.22	0.237	0.228	0.085	35.9
H2	Copper	µg/l	33	0.39	0.389	0.392	0.07	18.0
H3	Copper	µg/l	33	0.42	0.42	0.428	0.056	13.3
H4	Copper	µg/l	32	0.292	0.278	0.287	0.072	25.8
H1	Lead	µg/l	39	0.8	0.789	0.8	0.182	23.0
H2	Lead	µg/l	38	0.585	0.601	0.589	0.164	27.2
H3	Lead	µg/l	38	0.665	0.667	0.673	0.123	18.4
H4	Lead	µg/l	39	0.913	0.875	0.913	0.158	18.1
H1	Nickel	µg/l	34	0.36	0.366	0.362	0.161	43.9
H2	Nickel	µg/l	34	0.351	0.361	0.359	0.102	28.1
H3	Nickel	µg/l	32	0.21	0.228	0.216	0.113	49.5
H4	Nickel	µg/l	34	0.329	0.357	0.343	0.132	36.9
H1	Zinc	µg/l	36	3.88	4.019	4.05	0.906	22.6
H2	Zinc	µg/l	37	2.73	2.934	2.88	1.013	34.5
H3	Zinc	µg/l	38	3.85	4.417	4.085	1.977	44.8
H4	Zinc	µg/l	37	3.65	3.781	3.7	0.92	24.3