

## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 3, Czech Hydrometeorological Institute, Praha (Czech Republic)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	19.385	18.55	17.899	1.268	1.172	S
B3	SO <sub>2</sub>	20.285	20.751	20.331	2.259	-0.02	S
B4	SO <sub>2</sub>	70.035	72.14	73.145	3.825	-0.813	S
B5	SO <sub>2</sub>	77.215	80.15	80.15	5.628	-0.521	S
B2	HNO <sub>3</sub>	14.245	14.72	14.289	0.417	-0.107	S
B3	HNO <sub>3</sub>	15.525	16.36	16.039	0.845	-0.608	S
B4	HNO <sub>3</sub>	29.715	29.45	29.514	1.549	0.13	S
B5	HNO <sub>3</sub>	32.115	32.72	31.908	1.228	0.168	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

Please check the EMEP intercalibration website for Youden plots, updated expected values ect:  
<http://www.nilu.no/projects/ccc/intercomparison.html>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 4, Aarhus University, Department of Environmental Science (Denmark)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	16.52	18.55	17.899	1.268	-1.088	S
B3	SO <sub>2</sub>	18.4	20.751	20.331	2.259	-0.855	S
B4	SO <sub>2</sub>	68.4	72.14	73.145	3.825	-1.241	S
B5	SO <sub>2</sub>	76.59	80.15	80.15	5.628	-0.633	S
B2	HNO <sub>3</sub>	14.43	14.72	14.289	0.417	0.337	S
B3	HNO <sub>3</sub>	16.02	16.36	16.039	0.845	-0.022	S
B4	HNO <sub>3</sub>	29.1	29.45	29.514	1.549	-0.267	S
B5	HNO <sub>3</sub>	32.52	32.72	31.908	1.228	0.498	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 5, Finnish Meteorological Institute. Air Quality Department (Finland)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	19.311	18.55	17.899	1.268	1.113	S
B3	SO <sub>2</sub>	21.895	20.751	20.331	2.259	0.693	S
B4	SO <sub>2</sub>	74.191	72.14	73.145	3.825	0.273	S
B5	SO <sub>2</sub>	82.507	80.15	80.15	5.628	0.419	S
B2	HNO <sub>3</sub>	14.521	14.72	14.289	0.417	0.554	S
B3	HNO <sub>3</sub>	16.076	16.36	16.039	0.845	0.045	S
B4	HNO <sub>3</sub>	29.308	29.45	29.514	1.549	-0.133	S
B5	HNO <sub>3</sub>	32.358	32.72	31.908	1.228	0.367	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 15, Norwegian Institute for Air Research NILU (Norway)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	18.06	18.55	17.899	1.268	0.127	S
B3	SO <sub>2</sub>	19.12	20.751	20.331	2.259	-0.536	S
B4	SO <sub>2</sub>	73.72	72.14	73.145	3.825	0.15	S
B5	SO <sub>2</sub>	72.66	80.15	80.15	5.628	-1.331	S
B2	HNO <sub>3</sub>	13.6	14.72	14.289	0.417	-1.655	S
B3	HNO <sub>3</sub>	14.54	16.36	16.039	0.845	-1.775	S
B4	HNO <sub>3</sub>	28.18	29.45	29.514	1.549	-0.861	S
B5	HNO <sub>3</sub>	29.19	32.72	31.908	1.228	-2.214	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 16, Institute of Meteorology and Water Management, Warsaw (Poland)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	17.63	18.55	17.899	1.268	-0.212	S
B3	SO <sub>2</sub>	18.95	20.751	20.331	2.259	-0.611	S
B4	SO <sub>2</sub>	70.46	72.14	73.145	3.825	-0.702	S
B5	SO <sub>2</sub>	77.55	80.15	80.15	5.628	-0.462	S
B2	HNO <sub>3</sub>	13.93	14.72	14.289	0.417	-0.863	S
B3	HNO <sub>3</sub>	15.63	16.36	16.039	0.845	-0.484	S
B4	HNO <sub>3</sub>	28.53	29.45	29.514	1.549	-0.635	S
B5	HNO <sub>3</sub>	31.48	32.72	31.908	1.228	-0.349	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 20, Swedish Environmental Research Institute IVL, Gothenburg (Sweden)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	17.925	18.55	17.899	1.268	0.021	S
B3	SO <sub>2</sub>	19.925	20.751	20.331	2.259	-0.18	S
B4	SO <sub>2</sub>	71.825	72.14	73.145	3.825	-0.345	S
B5	SO <sub>2</sub>	79.425	80.15	80.15	5.628	-0.129	S
B2	HNO <sub>3</sub>	14.105	14.72	14.289	0.417	-0.442	S
B3	HNO <sub>3</sub>	15.806	16.36	16.039	0.845	-0.276	S
B4	HNO <sub>3</sub>	27.905	29.45	29.514	1.549	-1.038	S
B5	HNO <sub>3</sub>	31.506	32.72	31.908	1.228	-0.328	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 22, Institute of Global Climate and Ecology (Russian Federation)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	20.68	18.55	17.899	1.268	2.194	S
B3	SO <sub>2</sub>	24.28	20.751	20.331	2.259	1.748	S
B4	SO <sub>2</sub>	99.32	72.14	73.145	3.825	6.844	Q
B5	SO <sub>2</sub>	112.42	80.15	80.15	5.628	5.734	U
B2	HNO <sub>3</sub>	18.84	14.72	14.289	0.417	10.921	Q
B3	HNO <sub>3</sub>	21.23	16.36	16.039	0.845	6.147	Q
B4	HNO <sub>3</sub>	41.21	29.45	29.514	1.549	7.55	Q
B5	HNO <sub>3</sub>	38.57	32.72	31.908	1.228	5.425	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 31, Slovak Hydrometeorological Institute (Slovakia)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	21.147	18.55	17.899	1.268	2.562	S
B3	SO <sub>2</sub>	23.511	20.751	20.331	2.259	1.408	S
B4	SO <sub>2</sub>	80.918	72.14	73.145	3.825	2.032	S
B5	SO <sub>2</sub>	97.273	80.15	80.15	5.628	3.043	Q
B2	HNO <sub>3</sub>	14.444	14.72	14.289	0.417	0.371	S
B3	HNO <sub>3</sub>	18.225	16.36	16.039	0.845	2.589	S
B4	HNO <sub>3</sub>	31.902	29.45	29.514	1.549	1.541	S
B5	HNO <sub>3</sub>	38.463	32.72	31.908	1.228	5.338	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 32, Atmospheric Pollution Research Laboratory, Institute of Physics, Vilnius (Lithuania)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	15.93	18.55	17.899	1.268	-1.553	S
B3	SO <sub>2</sub>	19.09	20.751	20.331	2.259	-0.549	S
B4	SO <sub>2</sub>	71.01	72.14	73.145	3.825	-0.558	S
B5	SO <sub>2</sub>	80.39	80.15	80.15	5.628	0.043	S
B2	HNO <sub>3</sub>	13.96	14.72	14.289	0.417	-0.791	S
B3	HNO <sub>3</sub>	15.55	16.36	16.039	0.845	-0.579	S
B4	HNO <sub>3</sub>	28.24	29.45	29.514	1.549	-0.822	S
B5	HNO <sub>3</sub>	31.57	32.72	31.908	1.228	-0.275	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 33, Environmental Pollution Observ. Centre (Latvia)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	16.084	18.55	17.899	1.268	-1.431	S
B3	SO <sub>2</sub>	19.366	20.751	20.331	2.259	-0.427	S
B4	SO <sub>2</sub>	70.499	72.14	73.145	3.825	-0.692	S
B5	SO <sub>2</sub>	79.394	80.15	80.15	5.628	-0.134	S
B2	HNO <sub>3</sub>	14.242	14.72	14.289	0.417	-0.115	S
B3	HNO <sub>3</sub>	15.624	16.36	16.039	0.845	-0.49	S
B4	HNO <sub>3</sub>	28.271	29.45	29.514	1.549	-0.802	S
B5	HNO <sub>3</sub>	31.854	32.72	31.908	1.228	-0.045	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 34, Refik Saydam Hygiene Center, Ankara (Turkey)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	17.717	18.55	17.899	1.268	-0.144	S
B3	SO <sub>2</sub>	16.048	20.751	20.331	2.259	-1.896	Q
B4	SO <sub>2</sub>	81.846	72.14	73.145	3.825	2.275	S
B5	SO <sub>2</sub>	73.642	80.15	80.15	5.628	-1.156	S
B2	HNO <sub>3</sub>	17.832	14.72	14.289	0.417	8.502	Q
B3	HNO <sub>3</sub>	16.559	16.36	16.039	0.845	0.616	S
B4	HNO <sub>3</sub>	33.079	29.45	29.514	1.549	2.301	S
B5	HNO <sub>3</sub>	30.427	32.72	31.908	1.228	-1.206	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 36, Hydrometeorological Institute of Slovenia (Slovenia)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	18.055	18.55	17.899	1.268	0.123	S
B3	SO <sub>2</sub>	20.755	20.751	20.331	2.259	0.188	S
B4	SO <sub>2</sub>	74.655	72.14	73.145	3.825	0.395	S
B5	SO <sub>2</sub>	79.855	80.15	80.15	5.628	-0.052	S
B2	HNO <sub>3</sub>	14.89	14.72	14.289	0.417	1.441	S
B3	HNO <sub>3</sub>	16.79	16.36	16.039	0.845	0.89	S
B4	HNO <sub>3</sub>	30.69	29.45	29.514	1.549	0.759	S
B5	HNO <sub>3</sub>	32.39	32.72	31.908	1.228	0.392	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 38, Estonian Environmental Research Centre, Tallinn (Estonia)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	18.65	18.55	17.899	1.268	0.592	S
B3	SO <sub>2</sub>	24.65	20.751	20.331	2.259	1.912	S
B4	SO <sub>2</sub>	71.65	72.14	73.145	3.825	-0.391	S
B5	SO <sub>2</sub>	81.65	80.15	80.15	5.628	0.267	S
B2	HNO <sub>3</sub>		14.72	14.289	0.417		B
B3	HNO <sub>3</sub>		16.36	16.039	0.845		B
B4	HNO <sub>3</sub>		29.45	29.514	1.549		B
B5	HNO <sub>3</sub>		32.72	31.908	1.228		B

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 39, Environmental Monitoring Laboratory, Institute of Environmental Protection (Poland)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	17.533	18.55	17.899	1.268	-0.289	S
B3	SO <sub>2</sub>	19.433	20.751	20.331	2.259	-0.398	S
B4	SO <sub>2</sub>	70.233	72.14	73.145	3.825	-0.761	S
B5	SO <sub>2</sub>	79.533	80.15	80.15	5.628	-0.11	S
B2	HNO <sub>3</sub>	14.687	14.72	14.289	0.417	0.954	S
B3	HNO <sub>3</sub>	16.187	16.36	16.039	0.845	0.176	S
B4	HNO <sub>3</sub>	28.587	29.45	29.514	1.549	-0.598	S
B5	HNO <sub>3</sub>	31.987	32.72	31.908	1.228	0.064	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 158, Acid Deposition and Oxidant Research Center ADOCRC, Niigata (Japan)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	17.905	18.55	17.899	1.268	0.005	S
B3	SO <sub>2</sub>	19.975	20.751	20.331	2.259	-0.158	S
B4	SO <sub>2</sub>	74.375	72.14	73.145	3.825	0.322	S
B5	SO <sub>2</sub>	83.895	80.15	80.15	5.628	0.665	S
B2	HNO <sub>3</sub>	13.76	14.72	14.289	0.417	-1.271	S
B3	HNO <sub>3</sub>	15.51	16.36	16.039	0.845	-0.626	S
B4	HNO <sub>3</sub>	30.73	29.45	29.514	1.549	0.785	S
B5	HNO <sub>3</sub>	34.31	32.72	31.908	1.228	1.956	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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## EMEP – 30<sup>th</sup> intercomparison of analytical methods

Laboratory 165, Institute of Meteorology and Hydrology, Ha Noi city (Vietnam)

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

Sample name	Determinand	Reported value <sup>¥</sup>	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>¤</sup>
B2	SO <sub>2</sub>	17.1	18.55	17.899	1.268	-0.63	S
B3	SO <sub>2</sub>	19.61	20.751	20.331	2.259	-0.319	S
B4	SO <sub>2</sub>	73.36	72.14	73.145	3.825	0.056	S
B5	SO <sub>2</sub>	80.67	80.15	80.15	5.628	0.092	S
B2	HNO <sub>3</sub>	14.95	14.72	14.289	0.417	1.585	S
B3	HNO <sub>3</sub>	16.5	16.36	16.039	0.845	0.546	S
B4	HNO <sub>3</sub>	28.96	29.45	29.514	1.549	-0.358	S
B5	HNO <sub>3</sub>	33.1	32.72	31.908	1.228	0.971	S

¥ If your laboratory reported values for blank samples, the mean value of the two blank samples is subtracted from the reported value.

If your laboratory reported the methods detection limit for the blank sample, ½ DL is subtracted from the reported value.

¤ EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than ±20% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

Q – Questionable: Your result deviates between ±20-40% of the expected value for SO<sub>2</sub> and HNO<sub>3</sub>

U – Unsatisfactory: Your result deviates more than ±40% of the expected value for SO<sub>2</sub> and for HNO<sub>3</sub>

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