

## EMEP – 29<sup>th</sup> intercomparison of analytical methods

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

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.053	0.056	0.059	0.01	-0.633	S
C2	NO <sub>2</sub>	0.091	0.094	0.097	0.013	-0.44	S
C3	NO <sub>2</sub>	0.073	0.075	0.077	0.01	-0.384	S
C4	NO <sub>2</sub>	0.108	0.113	0.116	0.014	-0.585	S

<sup>x</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

Q – Questionable: Your result deviates between  $\pm 10\text{--}20\%$  of the expected value

U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

B – Blank: You reported either no value or the detection limit

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 – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 8, Umweltbundesamt, Langen (Germany)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.055	0.056	0.059	0.01	-0.424	S
C2	NO <sub>2</sub>	0.092	0.094	0.097	0.013	-0.393	S
C3	NO <sub>2</sub>	0.074	0.075	0.077	0.01	-0.295	S
C4	NO <sub>2</sub>	0.11	0.113	0.116	0.014	-0.419	S

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 10, Institute for Atmospheric Physics (Hungary)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.053	0.056	0.059	0.01	-0.633	S
C2	NO <sub>2</sub>	0.081	0.094	0.097	0.013	-1.217	Q
C3	NO <sub>2</sub>	0.064	0.075	0.077	0.01	-1.278	Q
C4	NO <sub>2</sub>	0.101	0.113	0.116	0.014	-1.092	Q

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 12, Met Eireann, Dublin (Ireland)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.056	0.056	0.059	0.01	-0.32	S
C2	NO <sub>2</sub>	0.099	0.094	0.097	0.013	0.182	S
C3	NO <sub>2</sub>	0.08	0.075	0.077	0.01	0.311	S
C4	NO <sub>2</sub>	0.117	0.113	0.116	0.014	0.067	S

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

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

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.057	0.056	0.059	0.01	-0.216	S
C2	NO <sub>2</sub>	0.092	0.094	0.097	0.013	-0.362	S
C3	NO <sub>2</sub>	0.07	0.075	0.077	0.01	-0.682	S
C4	NO <sub>2</sub>	0.1	0.113	0.116	0.014	-1.165	Q

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 19, Centro Nacional de Sanidad Ambiental (Spain)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.09	0.056	0.059	0.01	3.229	U
C2	NO <sub>2</sub>	0.14	0.094	0.097	0.013	3.367	U
C3	NO <sub>2</sub>	0.11	0.075	0.077	0.01	3.291	U
C4	NO <sub>2</sub>	0.16	0.113	0.116	0.014	3.181	U

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

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

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	< 0.060	0.056	0.059	0.01		B
C2	NO <sub>2</sub>	0.093	0.094	0.097	0.013	-0.285	S
C3	NO <sub>2</sub>	0.072	0.075	0.077	0.01	-0.484	S
C4	NO <sub>2</sub>	0.109	0.113	0.116	0.014	-0.513	S

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 23, Ricardo-AEA Limited (United Kingdom)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.168	0.056	0.059	0.01	11.371	U
C2	NO <sub>2</sub>	0.279	0.094	0.097	0.013	14.165	U
C3	NO <sub>2</sub>	0.22	0.075	0.077	0.01	14.217	U
C4	NO <sub>2</sub>	0.336	0.113	0.116	0.014	15.928	U

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U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 24, Serbian Environmental Protection Agency (Serbia)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.061	0.056	0.059	0.01	0.202	S
C2	NO <sub>2</sub>	0.093	0.094	0.097	0.013	-0.285	S
C3	NO <sub>2</sub>	0.081	0.075	0.077	0.01	0.41	S
C4	NO <sub>2</sub>	0.125	0.113	0.116	0.014	0.646	Q

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U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 31, Slovak Hydrometeorological Institute (Slovakia)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.056	0.056	0.059	0.01	-0.32	S
C2	NO <sub>2</sub>	0.094	0.094	0.097	0.013	-0.207	S
C3	NO <sub>2</sub>	0.075	0.075	0.077	0.01	-0.186	S
C4	NO <sub>2</sub>	0.112	0.113	0.116	0.014	-0.296	S

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

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

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.056	0.056	0.059	0.01	-0.32	S
C2	NO <sub>2</sub>	0.099	0.094	0.097	0.013	0.182	S
C3	NO <sub>2</sub>	0.077	0.075	0.077	0.01	0.013	S
C4	NO <sub>2</sub>	0.122	0.113	0.116	0.014	0.429	S

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 33, Environmental Pollution Observ. Centre (Latvia)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.064	0.056	0.059	0.01	0.515	Q
C2	NO <sub>2</sub>	0.103	0.094	0.097	0.013	0.492	S
C3	NO <sub>2</sub>	0.084	0.075	0.077	0.01	0.708	Q
C4	NO <sub>2</sub>	0.125	0.113	0.116	0.014	0.646	Q

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 47, Jelenia Gora (Poland)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.068	0.056	0.059	0.01	0.932	U
C2	NO <sub>2</sub>	0.105	0.094	0.097	0.013	0.648	Q
C3	NO <sub>2</sub>	0.079	0.075	0.077	0.01	0.212	S
C4	NO <sub>2</sub>	0.116	0.113	0.116	0.014	-0.006	S

<sup>x</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

Q – Questionable: Your result deviates between  $\pm 10\text{--}20\%$  of the expected value

U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

B – Blank: You reported either no value or the detection limit

Please check the EMEP intercalibration website for Youden plots, updated expected values ect:  
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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 35, Meteorological and Hydrological Service of Croatia (Croatia)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.056	0.056	0.059	0.01	-0.32	S
C2	NO <sub>2</sub>	0.094	0.094	0.097	0.013	-0.207	S
C3	NO <sub>2</sub>	0.073	0.075	0.077	0.01	-0.384	S
C4	NO <sub>2</sub>	0.114	0.113	0.116	0.014	-0.151	S

<sup>x</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 36, Hydrometeorological Institute of Slovenia (Slovenia)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.054	0.056	0.059	0.01	-0.529	S
C2	NO <sub>2</sub>	0.091	0.094	0.097	0.013	-0.44	S
C3	NO <sub>2</sub>	0.075	0.075	0.077	0.01	-0.186	S
C4	NO <sub>2</sub>	0.118	0.113	0.116	0.014	0.139	S

<sup>x</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

Q – Questionable: Your result deviates between  $\pm 10\text{--}20\%$  of the expected value

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

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

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.053	0.056	0.059	0.01	-0.633	S
C2	NO <sub>2</sub>	0.09	0.094	0.097	0.013	-0.518	S
C3	NO <sub>2</sub>	0.071	0.075	0.077	0.01	-0.583	S
C4	NO <sub>2</sub>	0.111	0.113	0.116	0.014	-0.368	S

<sup>x</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

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## EMEP – 29<sup>th</sup> intercomparison of analytical methods

Laboratory 173, Company Petrokemija d.d. (Croatia)

### Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm <sup>x</sup>
C1	NO <sub>2</sub>	0.054	0.056	0.059	0.01	-0.529	S
C2	NO <sub>2</sub>	0.09	0.094	0.097	0.013	-0.518	S
C3	NO <sub>2</sub>	0.072	0.075	0.077	0.01	-0.484	S
C4	NO <sub>2</sub>	0.109	0.113	0.116	0.014	-0.513	S

<sup>x</sup> EMEP quality norm; the letters in the column indicates:

S – Satisfactory: Your result deviates less than  $\pm 10\%$  of the expected value

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U – Unsatisfactory: Your result deviates more than  $\pm 20\%$  of the expected value

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