

EMEP – 31st 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 ^x
C1	NO ₂	0.09	0.087	0.085	0.007	0.813	S
C2	NO ₂	0.076	0.072	0.073	0.006	0.543	S
C3	NO ₂	0.126	0.116	0.113	0.009	1.34	S
C4	NO ₂	0.161	0.145	0.143	0.009	1.972	Q

^x 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 – 31st 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 ^x
C1	NO ₂	0.081	0.087	0.085	0.007	-0.549	S
C2	NO ₂	0.066	0.072	0.073	0.006	-1.072	S
C3	NO ₂	0.109	0.116	0.113	0.009	-0.474	S
C4	NO ₂	0.138	0.145	0.143	0.009	-0.518	S

^x EMEP quality norm; the letters in the column indicates:

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Laboratory 12, Met. Eirann, 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 ^x
C1	NO ₂	0.091	0.087	0.085	0.007	0.964	S
C2	NO ₂	0.072	0.072	0.073	0.006	-0.103	S
C3	NO ₂	0.117	0.116	0.113	0.009	0.379	S
C4	NO ₂	0.139	0.145	0.143	0.009	-0.41	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st 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 ^x
C1	NO ₂	0.078	0.087	0.085	0.007	-1.004	Q
C2	NO ₂	0.064	0.072	0.073	0.006	-1.395	Q
C3	NO ₂	0.099	0.116	0.113	0.009	-1.541	Q
C4	NO ₂	0.122	0.145	0.143	0.009	-2.25	Q

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

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.073	0.072	0.073	0.006	0.059	S
C3	NO ₂	0.116	0.116	0.113	0.009	0.273	S
C4	NO ₂	0.144	0.145	0.143	0.009	0.132	S

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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 ^x
C1	NO ₂	0.09	0.087	0.085	0.007	0.813	S
C2	NO ₂	< 0.090	0.072	0.073	0.006		B
C3	NO ₂	0.11	0.116	0.113	0.009	-0.368	S
C4	NO ₂	0.14	0.145	0.143	0.009	-0.301	S

^x EMEP quality norm; the letters in the column indicates:

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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 ^x
C1	NO ₂	0.083	0.087	0.085	0.007	-0.247	S
C2	NO ₂	0.071	0.072	0.073	0.006	-0.264	S
C3	NO ₂	0.116	0.116	0.113	0.009	0.273	S
C4	NO ₂	0.145	0.145	0.143	0.009	0.24	S

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Laboratory 23, Ricardo-AEA Energy and environment (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 ^x
C1	NO ₂	0.088	0.087	0.085	0.007	0.586	S
C2	NO ₂	0.073	0.072	0.073	0.006	0.107	S
C3	NO ₂	0.118	0.116	0.113	0.009	0.497	S
C4	NO ₂	0.149	0.145	0.143	0.009	0.64	S

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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 ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.07	0.072	0.073	0.006	-0.426	S
C3	NO ₂	0.113	0.116	0.113	0.009	-0.047	S
C4	NO ₂	0.138	0.145	0.143	0.009	-0.518	S

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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 ^x
C1	NO ₂	0.088	0.087	0.085	0.007	0.51	S
C2	NO ₂	0.073	0.072	0.073	0.006	0.059	S
C3	NO ₂	0.119	0.116	0.113	0.009	0.593	S
C4	NO ₂	0.148	0.145	0.143	0.009	0.565	S

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EMEP – 31st 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 ^x
C1	NO ₂	0.093	0.087	0.085	0.007	1.267	S
C2	NO ₂	0.076	0.072	0.073	0.006	0.543	S
C3	NO ₂	0.125	0.116	0.113	0.009	1.233	S
C4	NO ₂	0.152	0.145	0.143	0.009	0.998	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st 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 ^x
C1	NO ₂	0.09	0.087	0.085	0.007	0.813	S
C2	NO ₂	0.076	0.072	0.073	0.006	0.511	S
C3	NO ₂	0.119	0.116	0.113	0.009	0.561	S
C4	NO ₂	0.145	0.145	0.143	0.009	0.197	S

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EMEP – 31st intercomparison of analytical methods

Laboratory 34, Ministry of Environment and Urbanisation (Turkey)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.129	0.087	0.085	0.007	6.717	U
C2	NO ₂	0.154	0.072	0.073	0.006	13.14	U
C3	NO ₂	0.198	0.116	0.113	0.009	9.022	U
C4	NO ₂	0.234	0.145	0.143	0.009	9.875	U

^x EMEP quality norm; the letters in the column indicates:

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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 ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.07	0.072	0.073	0.006	-0.426	S
C3	NO ₂	0.112	0.116	0.113	0.009	-0.154	S
C4	NO ₂	0.139	0.145	0.143	0.009	-0.41	S

^x 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

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EMEP – 31st 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 ^x
C1	NO ₂	0.096	0.087	0.085	0.007	1.721	Q
C2	NO ₂	0.081	0.072	0.073	0.006	1.351	Q
C3	NO ₂	0.119	0.116	0.113	0.009	0.593	S
C4	NO ₂	0.15	0.145	0.143	0.009	0.781	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st intercomparison of analytical methods

Laboratory 42, State Hydrometeorological Service, Chisnau (Moldova)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.056	0.087	0.085	0.007	-4.334	U
C2	NO ₂	0.1	0.072	0.073	0.006	4.419	U
C3	NO ₂	0.07	0.116	0.113	0.009	-4.635	U
C4	NO ₂	0.109	0.145	0.143	0.009	-3.657	U

^x EMEP quality norm; the letters in the column indicates:

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- 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

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EMEP – 31st 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 ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.071	0.072	0.073	0.006	-0.264	S
C3	NO ₂	0.114	0.116	0.113	0.009	0.059	S
C4	NO ₂	0.141	0.145	0.143	0.009	-0.193	S

^x EMEP quality norm; the letters in the column indicates:

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- 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
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EMEP – 31st intercomparison of analytical methods

Laboratory 182, Research Institute for Analytical Instrumentation, ICIA (Romania)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.069	0.072	0.073	0.006	-0.587	S
C3	NO ₂	0.112	0.116	0.113	0.009	-0.154	S
C4	NO ₂	0.14	0.145	0.143	0.009	-0.301	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st intercomparison of analytical methods

Laboratory 183, Public health institute Uzice (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.082	0.087	0.085	0.007	-0.398	S
C2	NO ₂	0.067	0.072	0.073	0.006	-0.91	S
C3	NO ₂	0.112	0.116	0.113	0.009	-0.154	S
C4	NO ₂	0.139	0.145	0.143	0.009	-0.41	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st intercomparison of analytical methods

Laboratory 184, Institute for Public Health Pozarevac (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.082	0.087	0.085	0.007	-0.398	S
C2	NO ₂	0.072	0.072	0.073	0.006	-0.103	S
C3	NO ₂	0.116	0.116	0.113	0.009	0.273	S
C4	NO ₂	0.149	0.145	0.143	0.009	0.673	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st intercomparison of analytical methods

Laboratory 185, Public Health Centre - Cacak, Department for Sanitary Chemistry and Ecotoxicology
(Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.071	0.072	0.073	0.006	-0.264	S
C3	NO ₂	0.114	0.116	0.113	0.009	0.059	S
C4	NO ₂	0.142	0.145	0.143	0.009	-0.085	S

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- U – Unsatisfactory: Your result deviates more than $\pm 20\%$ of the expected value
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EMEP – 31st intercomparison of analytical methods

Laboratory 186, Public Health Institute - Kraljevo (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.085	0.087	0.085	0.007	0.056	S
C2	NO ₂	0.073	0.072	0.073	0.006	0.059	S
C3	NO ₂	0.113	0.116	0.113	0.009	-0.047	S
C4	NO ₂	0.146	0.145	0.143	0.009	0.348	S

^x EMEP quality norm; the letters in the column indicates:

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- 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
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EMEP – 31st intercomparison of analytical methods

Laboratory 187, Public Health Institute - Nis, Department for Sanitary Chemistry (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.083	0.087	0.085	0.007	-0.247	S
C2	NO ₂	0.07	0.072	0.073	0.006	-0.426	S
C3	NO ₂	0.114	0.116	0.113	0.009	0.059	S
C4	NO ₂	0.144	0.145	0.143	0.009	0.132	S

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EMEP – 31st intercomparison of analytical methods

Laboratory 188, Institute of Public Health - Krusevac (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.07	0.072	0.073	0.006	-0.426	S
C3	NO ₂	0.114	0.116	0.113	0.009	0.059	S
C4	NO ₂	0.14	0.145	0.143	0.009	-0.301	S

^x EMEP quality norm; the letters in the column indicates:

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

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EMEP – 31st intercomparison of analytical methods

Laboratory 189, Institute of Public Health - Kikinda (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.083	0.087	0.085	0.007	-0.247	S
C2	NO ₂	0.072	0.072	0.073	0.006	-0.103	S
C3	NO ₂	0.115	0.116	0.113	0.009	0.166	S
C4	NO ₂	0.15	0.145	0.143	0.009	0.781	S

^x 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
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EMEP – 31st intercomparison of analytical methods

Laboratory 190, Institute for occupational safety and preventive engineering - Novi Sad (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.087	0.087	0.085	0.007	0.359	S
C2	NO ₂	0.073	0.072	0.073	0.006	0.059	S
C3	NO ₂	0.115	0.116	0.113	0.009	0.166	S
C4	NO ₂	0.142	0.145	0.143	0.009	-0.085	S

^x EMEP quality norm; the letters in the column indicates:

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- Q – Questionable: Your result deviates between $\pm 10\text{--}20\%$ of the expected value
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EMEP – 31st intercomparison of analytical methods

Laboratory 192, The Public Health Institute Sabac (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.084	0.087	0.085	0.007	-0.095	S
C2	NO ₂	0.072	0.072	0.073	0.006	-0.103	S
C3	NO ₂	0.114	0.116	0.113	0.009	0.059	S
C4	NO ₂	0.15	0.145	0.143	0.009	0.781	S

^x EMEP quality norm; the letters in the column indicates:

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Please check the EMEP intercalibration website for Youden plots, updated expected values ect:
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EMEP – 31st intercomparison of analytical methods

Laboratory 193, Institute of Public Health of Vojvodina (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.091	0.087	0.085	0.007	0.964	S
C2	NO ₂	0.078	0.072	0.073	0.006	0.866	S
C3	NO ₂	0.121	0.116	0.113	0.009	0.806	S
C4	NO ₂	0.155	0.145	0.143	0.009	1.323	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st intercomparison of analytical methods

Laboratory 194, Institute of Public Health - Zrenjanin (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.083	0.087	0.085	0.007	-0.247	S
C2	NO ₂	0.07	0.072	0.073	0.006	-0.426	S
C3	NO ₂	0.113	0.116	0.113	0.009	-0.047	S
C4	NO ₂	0.143	0.145	0.143	0.009	0.023	S

^x EMEP quality norm; the letters in the column indicates:

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- U – Unsatisfactory: Your result deviates more than $\pm 20\%$ of the expected value
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EMEP – 31st intercomparison of analytical methods

Laboratory 195, Institute of Public Health - Suobtica (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.085	0.087	0.085	0.007	0.056	S
C2	NO ₂	0.069	0.072	0.073	0.006	-0.587	S
C3	NO ₂	0.113	0.116	0.113	0.009	-0.047	S
C4	NO ₂	0.142	0.145	0.143	0.009	-0.085	S

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- U – Unsatisfactory: Your result deviates more than $\pm 20\%$ of the expected value
- B – Blank: You reported either no value or the detection limit

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EMEP – 31st intercomparison of analytical methods

Laboratory 196, Institute of Public Health Leskovac (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.083	0.087	0.085	0.007	-0.247	S
C2	NO ₂	0.071	0.072	0.073	0.006	-0.264	S
C3	NO ₂	0.115	0.116	0.113	0.009	0.166	S
C4	NO ₂	0.139	0.145	0.143	0.009	-0.41	S

^x EMEP quality norm; the letters in the column indicates:

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EMEP – 31st intercomparison of analytical methods

Laboratory 197, Institute of Occupational Health - Novi Sad (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.013	0.087	0.085	0.007	-10.844	U
C2	NO ₂	0.01	0.072	0.073	0.006	-10.115	U
C3	NO ₂	0.018	0.116	0.113	0.009	-10.183	U
C4	NO ₂	0.023	0.145	0.143	0.009	-12.968	U

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EMEP – 31st intercomparison of analytical methods

Laboratory 198, Institute for public health - Sremska Mitrovica (Republic of Serbia)

Nitrogen dioxide in absorbing solution (C-samples)

Sample name	Determinand	Reported value	Expected value	Mean value	Standard deviation	Z score	EMEP quality norm ^x
C1	NO ₂	0.083	0.087	0.085	0.007	-0.247	S
C2	NO ₂	0.07	0.072	0.073	0.006	-0.426	S
C3	NO ₂	0.114	0.116	0.113	0.009	0.059	S
C4	NO ₂	0.146	0.145	0.143	0.009	0.348	S

^x EMEP quality norm; the letters in the column indicates:

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