

QAL2 Report 2011 according EN 14181

ENAEX SA., Chile Prillex America Plant Panna 4

Plant operator	ENAEX SA., Chile
Location	Nitric Acid Plant Panna 4 Prillex America Plant Costanera Norte Avenue 300 Mejillones Chile
Client	ENAEX SA. Alcantara 200 Las Condes, Santiago Chile
Order number	506735
Order date	22.7.2011
Date of test	14.12.2011 – 16.12.2011
Objective	QAL2 test according EN 14181
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The test results refer exclusively to
the units under test..

10.4 Parameterization of the electronic data evaluation system

Measured object	AMS parameter	AMS measuring range	QAL2 2011 parameter	QAL2 2011 measuring range	s _D *	Upper limit of the valid calibration range (standard conditions)	UNC
N ₂ O	a -50 a 12,5	0-200 ppm	a -50,5 b 12,64	0 to 202,3 ppm	0,5 ppm	56,7 ppm	1,62 %
Stack temperature	a -50 b 12,5	0 to 200 °C	a -50,1 b 12,52	0 to 200,3 °C	0,3 °C	136,7 °C	0,55 %
Static pressure	a -15 b 1,25	-10 to 10 hPa	a -14,8 b 1,20	-10 to 9,2 hPa	0,1 hPa	-2,6 hPa	1,31 %
Atmospheric pressure	a 850 b 12,5	900 to 1100 hPa	a 847,3 b 13,17	900 to 1110,7 hPa	0,3 hPa	1114,9 hPa	0,46 %
Volume flow ⁺	a 0 b 1	0 to 286082 m ³ /h	a 0 b 0,941	0 to 269203 m ³ /h	1337 m ³ /h	151517 m ³ /h	1,74 %

+ The coefficients of the calibration function for volume flow are expressed as m³/h_{AMScalib}/ m³/h_{AMS}

*Remark: The given standard deviation represents the standard deviation of the comparative measurements during QAL2. The standard deviation for QAL3 (s_{AMS}) has to be calculated in accordance with 7.2/7.3 and Annex C/F of EN 14181.

The calibrated AMS values are calculated by using the calibration function derived from the measured signals from the AMS. The calibration function was determined during the QAL2 test, and it is described by $\hat{y}_i = \hat{a} + \hat{b} \cdot x_i$ where

x_i is the measured signal of the AMS;

\hat{y}_i is the measured value (calibrated result) of the AMS ;

\hat{a} is the intercept of the calibration function;

\hat{b} is the slope of the calibration function.

10.5 Results of the Humidity measurements Panna 4

The absolute humidity in the stack gas (g H₂O/m³_{dry gas}) of Panna 4 was measured in accordance with USEPA CF42 method 4.

No.	Date	Measuring time	Humidity [g/m ³ _{dry gas}]
1	14.12.2011	13:10-14:10	2,1
2	14.12.2011	14:10-15:10	2,4
3	15.12.2011	10:20-11:20	2,2

Result:

The measured moisture content in the stack gas is less than 0,05 kg/m³_{dry gas}. The stack gas is dry (definition "Tool to determinate the mass flow of a green house gas in a gaseous stream").