

Bellaterra, 26th March, 2024

Test report number: **24/ 32301923 M1 (simplified)**

Petitioner: CLASP
1401 K ST NW Suite 1100
Washington, DC 20005 USA

Date of material delivery: 1st February, 2024

Date of testing: From 20th to 23nd February, 2024

TEST REPORT

Corresponding to *domestic hobs*

ISSUE REQUESTED

Partial tests according to the following standards and specifications of the Petitioner:




- EN 30-1-1: 2021
"Domestic cooking appliance burning gas. Part 1: Safety. General"
- CR1404: 1994
"Determination of emissions from appliances burning gaseous fuels during type-testing"
- AS/NZS 5263.0: 2023
"Gas appliances – Part 0: General requirements"



This report cancels and replaces the previous one with number 24/ 32301923 (simplified) dated 26/02/2024. The reason for the modification is to correct editorial mistakes (reported values), see page 6. It's indicated as (M1).

This document has **9** pages of which **0** are annex, this being page number 1.

RECEIVED SAMPLES

Appliance description	Gas-fired cooking appliance (hob)
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Code	TNO 1	TNO 2	TNO 3
Type	gas	gas	gas
APPLUS identification code	24/ 21811-01	24/ 21811-02	24/ 21811-03
Picture			
Tested cook zone consumption	Qmax: 1,86 kW (Hs)	Qmax: 1,92 kW (Hs)	Qmax: 1,79 kW (Hs)
	Qmin : 0,43 kW (Hs)	Qmin : 0,42 kW (Hs)	Qmin : 0,64 kW (Hs)

Code	TNO 4	TNO 5
Type	gas	gas
APPLUS identification code	24/ 21811-04	24/ 21811-05
Picture		
Tested cook zone consumption	Qmax: 1,84 kW (Hs)	Qmax: 1,73 kW (Hs)
	Qmin : 0,35 kW (Hs)	Qmin : 0,44 kW (Hs)

REQUESTED TESTS

Tests that have been requested by the Petitioner, based on the standards cited below, but including the Petitioner's modifications on the test methods:

DESCRIPTION	Standard / Test method	Clause
Emissions: CO/CO ₂	EN 30-1-1	7.3.2.4
Emissions: NO/NO ₂ /NO _x	CR 1404	Annex I
Emissions: CO/CO ₂ & ER ⁽¹⁾	AS/NZS 5263.0	5.13 Annex ZC 32

⁽¹⁾ ER = NO₂ emission rate

Remarks.-

- Cookware used for the tests has been selected by the Petitioner.

EN 30-1-1	AS/NZS 5263.0	Used cookware
Pot Ø 220 mm (aluminium) / water: 2000 g	Pot Ø 195 mm (aluminium) / water: 2300 g	Pot Ø 180-150 mm (aluminium) / water: 1500 g

- The sampling hoods that have been used for the tests are the ones defined in EN 30-1-1 standard. They are the same design and material as in AS/NZS 5263.0 standard.
- Used gas: negligible differences between gas H (used for tests) and gas N (described in AS/NZS 5263.0)

AS/NZS 5263.0

TABLE 3.1
TEST GAS TABLE

Test gas	Application	Composition, percent							Characteristics*			
		Hydrogen	Methane	Propane	Propylene	Butane	Nitrogen	Air	Specific energy MJ/kg	Heating value MJ/m³	Relative density	Wobbe index MJ/m³
N	Natural gas	—	97.5	1	—	—	1.5	—	—	37.8	0.571	50.0

EN 30-1-1

Table 2 — Characteristics of the test gases ^a for the first and second families, gas dry at 15 °C and 1 013,25 mbar

Gas family and Group	Test gases	Designation	Composition by volume % ^c	W_s MJ/m³	H_s MJ/m³	d
Group H	Reference gas	G 20	CH ₄ = 100	50,72	37,78	0,555

TEST CONDITIONS

I. Emissions: CO / CO₂

- Test method: According to DTMM ed. 9.4, clause 10.
- Test conditions:

Table 1				
Test	Clause DTMM	Test configuration	Cookware: Size / water load	Results
Pot material:			Aluminium	
Combustion (CO / CO ₂)	10	1 - Setting: maximum power	Pot Ø 180 mm (1500 ± 5) g	%CO
		2 - Setting: minimum power	Pot Ø 180 mm (1500 ± 5) g	
		3 - Setting: maximum power	Pot Ø 150 mm (1030 ± 5) g	
		4 - Setting: minimum power	Pot Ø 150 mm (1030 ± 5) g	

II. Emissions: NO / NO₂ / NO_x / ER

- Test method: According to DTMM ed. 9.4, clause 11.
- Test conditions:

Table 2				
Test	Clause DTMM	Test configuration	Cookware: Size / water load	Results
Pot material:			Aluminium	
Emission (NO/NO ₂) (ER)	11	1 - Setting: maximum power	Pot Ø 180 mm (1500 ± 5) g	mg/kWh [NO _x]
		2 - Setting: minimum power	Pot Ø 180 mm (1500 ± 5) g	
		3 - Setting: maximum power	Pot Ø 150 mm (1030 ± 5) g	ng/J [ER]
		4 - Setting: minimum power	Pot Ø 150 mm (1030 ± 5) g	

NO _{x, meas}	Value measured at nominal heat input (ppm)
NO _{x, corr} (ref. Hs)	Value corrected to reference conditions (mg/kWh)

RESULTS

➤ The obtained quantity of CO in the air-free and water-free products of combustion is:

Table 3										
Cookware material: Aluminium	COMBUSTION [Gas G 20 / p _n = 20 mbar]									
	% CO (European)					CO / CO ₂ (Australian)				
Tests	TNO 1	TNO 2	TNO 3	TNO 4	TNO 5	TNO 1	TNO 2	TNO 3	TNO 4	TNO 5
Config. 1: Max; Ø 180	0,0036	0,0178	0,0210	0,0401	0,0028	0,0004	0,0016	0,0009	0,0036	0,0003
Config. 2: Min; Ø 180	0,0156	0,0416	0,0053	0,0761	0,0400	0,0012	0,0042	0,0005	0,0071	0,0033
Config. 3: Max; Ø 150	0,0035	0,0110	0,0039	0,0185	0,0029	0,0003	0,0009	0,0004	0,0016	0,0003
Config. 4: Min; Ø 150	0,0177	0,0473	0,0074	0,0944	0,0314	0,0016	0,0050	0,0007	0,0091	0,0031

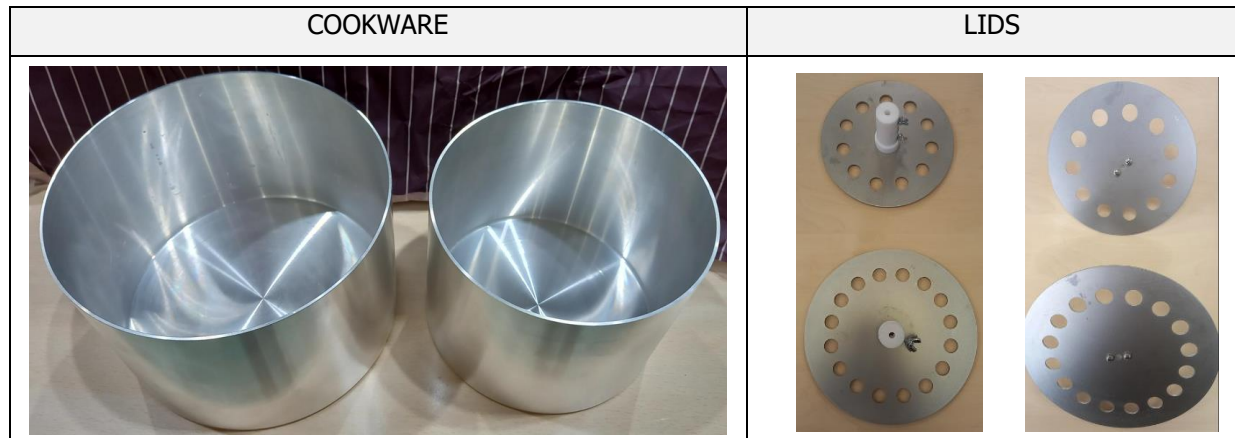
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➤ The obtained quantity of NOx / ER in the air-free and water-free products of combustion is:

Table 4										
Cookware material: Aluminium	EMISSIONS [Gas G 20 / p _n = 20 mbar]									
	% NOx (European) [mg/kWh]					ER (Australian) [ng/J]				
Tests	TNO 1	TNO 2	TNO 3	TNO 4	TNO 5	TNO 1	TNO 2	TNO 3	TNO 4	TNO 5
Config. 1: Max; Ø 180	116,8	106,1	92,9	93,7	100,3	6,1549 (M1)	7,3825 (M1)	5,7005 (M1)	9,1795 (M1)	5,0049 (M1)
Config. 2: Min; Ø 180	90,3	84,9	79,3	50,0	40,0	7,0229	7,8726	4,3310	8,7058	8,0777
Config. 3: Max; Ø 150	117,5	112,4	98,0	102,5	109,6	5,7209	6,5670	4,4164	7,3872	5,0424
Config. 4: Min; Ø 150	81,3	72,7	79,4	47,8	71,4	6,6113	8,3356	4,1083	9,6467	6,9038

PICTURES



TEST RIG: Combustion test with pot



EQUIPMENT

Description	Brand / model	Used for measuring
Pressure sensor	Axiomatic mod. TPD 9000	Gas supply pressure
Thermohygrometer	Lascar mod. EL-SIE-6+	Ambient temperature
Emissions analyzer	EMERSON ZT5400	NO, NO ₂ , CO, CO ₂ , O ₂
FID analyzer	FK Elektronik	Hydrocarbons measurement
Coriolis flowmeter	Micro-motion ELITE CMFS007	Gas consumption

MAIN EQUIPMENT



Emissions analyzer



Gas flowmeter



FID analyzer

Signed by

Technical Manager of Gas Appliances & Boilers Laboratory

Product Conformity B.U.

LGAI Technological Center, S.A. (APPLUS+)

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