

May 5, 2020

REPORT OF: Chemical Composition Analyses

REPORT TO: Max and Neo
Attn: Otilie Yee
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DATE APPROVED: April 21, 2020

IDENTIFICATION: 1 ea. Stainless Steel Dog Bowl

PROCEDURES:

Chemical composition was determined per ASTM E1086-14 using a SpectroMaxx Optical Emission Spectrometer, S/N: 118288/05, calibration due 10/2/2020, with verification performed prior to use.

The sample was dissolved under controlled temperature conditions using “aqua-regia” (HCl/HNO₃ - 3:1 ratio). Resulting solution was evaluated by Flame Atomic Absorption Spectroscopy (FAAS) per ASTM E1587 (modified) for Cadmium, Mercury, and Arsenic.

RESULTS:

Flame Atomic Absorption Spectroscopy (FAAS) –

Sample ID	Cadmium, ppm (mg/kg)	Mercury, ppm (mg/kg)	Arsenic, ppm (mg/kg)
Dog Bowl	<0.1	<1.0	<1.0

Lab No. 38729

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OES: Chemical Composition Analysis – The sample was submitted for chemical content evaluation with the following quantitative results:

Element	Dog Bowl, Wt. %	UNS S20400 (Nitronic 30)	UNS S24100
Carbon	0.053	0.03 max	0.15 max
Nitrogen	Not Measured	0.15-0.30	--
Silicon	0.361	1.00 max	1.00 max
Manganese	9.36	7.00-9.00	11.00-14.00
Phosphorus	0.041	0.04 nominal	0.060 max
Sulfur	0.0014	0.03 max	0.030 max
Chromium	14.94	15.0-17.0	16.50-19.50
Nickel	0.61	1.50-3.00	0.50-2.50
Molybdenum	0.122	--	--
Aluminum	<0.0005	--	--
Copper	2.08	--	--
Cobalt	0.057	--	--
Titanium	0.017	--	--
Niobium	0.026	--	--
Vanadium	0.056	--	--
Tungsten	<0.010	--	--
Lead	<0.0030	--	--
Magnesium	0.015	--	--
Boron	0.012	--	--
Tin	0.051	--	--
Zinc	0.013	--	--
Bismuth	<0.0020	--	--
Calcium	0.0016	--	--
Cerium	0.036	--	--
Zirconium	0.017	--	--
Lanthanum	<0.0010	--	--
Iron	<i>Remainder</i>	<i>Remainder</i>	<i>Remainder</i>

Except for slightly elevated carbon, manganese, and diminished chromium and nickel, the dog bowl had a chemical composition close to UNS S20400, Austenitic Cr-Mn, Ni-N Stainless Steel (Nitronic 30).

Except for slightly diminished manganese and chromium, the dog bowl sample had a chemical composition close to UNS S24100, Austenitic Cr-Mn-Ni Stainless Steel (18-2-Mn).

These results are based on the tests performed and are subject to change upon the receipt of new or additional information.

Respectfully submitted,

METALLURGICAL ENGINEERING SERVICES, INC.
 Firm Registration No. F-2674



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