TEST REPORT

IMR Report Number 202101966K

SUMMARY

cc Joe Madonna

Cedar Grove, NJ 07009

February 24, 2021

Malcolm MacDougall

501 Little Falls Road

One sample was received for chemical analysis.

PO Number

Servometer

SVP210602

Date Received February 18, 2021

Description Low Sulfur Nickel Type 2

Reference Date February 2021

The results are below.

CHEMISTRY

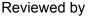
Element	Sample
Ni Alloy	99.71
Ni ¹	96.41
S ²	0.017

¹Determined by difference.

²Determined by combustion-infrared absorbance. Results in weight percent unless otherwise indicated. Method(s): CAP-017R (ICP-AES) and ASTM E 1019-18 (Comb./IGF)



Administered by PRI Administered by PRI Adcented by PRI Addented by PRI Addent



Jeremy Bean Chemist Reviewed by

Pete Lockard Supervisor Chemistry Department

All procedures were performed in accordance with the IMR Quality Manual, current revision, and related procedures; and the PWA MCL Manual F-23 and related procedures. The information contained in this test report represents only the material tested and may not be reproduced, except in full, without the written approval of IMR Test Labs ("IMR"). IMR maintains a quality system in compliance with the ISO/IEC 17025 and is accredited by A2LA, certificates #1140.01 and #1140.02. IMR will perform all testing in good faith using the proper procedures, trained personnel, and equipment to accomplish the testing required. Conformance will be based on results without measurement uncertainty applied, unless otherwise required all times to the amount charged for the services provided. All test samples will be retained for a minimum of 3 months and may be destroyed thereafter, unless otherwise specified by the customer. The recording of false, fictitious, or fraudulent statements or entries on this document may be punished as a felony under federal statutes. IMR Test Labs is a GEAE S-400 approved lab (Supplier Code 69805).

Servometer

TEST REPORT

The results are below.

SUMMARY

IMR Report Number 202101966B

Malcolm MacDougall Servometer 501 Little Falls Road Cedar Grove, NJ 07009

February 24, 2021

Joe Madonna

Two samples were received for tensile testing.

PO Number SVP210602

СС

Date Received February 18, 2021

Description Low Sulfur Nickel Type 2

Reference Date February 2021

TENSILE	PROPERTIES -	- ROOM	TEMPER	

	Tensile Strength	Yield Strength	Elongation
	(ksi)	(ksi)	(%)
Sample	178	157	1.6*

¹Average of two replicates *One replicate failed on gauge The width of the samples was 0.37 inches; gauge length was 2.00 inches. Yield strength was determined by the 0.2% offset method. Crosshead speed was 0.01 in./min. to yield and 0.1 in./min. to fracture. Method(s): ASTM E 8-16a



ACCREDITED

Madcap

Reviewed by

Molly Adams Engineer, Assoc. Reviewed by

Matt LePage Operations Project Manager

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Servometer

February 24, 2021

Malcolm MacDougall Servometer 501 Little Falls Road Cedar Grove, NJ 07009

TEST REPORT

IMR Report Number 202101966F

СС Joe Madonna

PO Number SVP210602

Date Received February 18, 2021

Description Low Sulfur Nickel Type 2

Reference Date February 2021

SUMMARY

One sample was received for micro-hardness testing.

The results are below.

MICRO-HARDNESS

	HV ₁₀₀ ¹
Sample	486

¹Average of three readings. Method(s): ASTM E 384-17



Nadcap ACCREDITED

Reviewed by

Buy Downer

Cheryl Downey Senior Metallurgical Specialist Reviewed by

- Wille

Travis Willhard Metallurgical Engineer

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Servometer