

IMR TEST LABS

A Curtiss-Wright Business Unit
www.imrtest.com

131 Woodsedge Drive
Lansing, NY 14882
T: 1.607.533.7000 | F: 1.607.533.9210

Original Date
January 22, 2020

Revision Date
January 24, 2020

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

cc: Joe Madonna

PO Number
SVP200445

Date Received
January 13, 2020

Description
Weldable Nickel

Reference Date
January 2020

TEST REPORT

IMR Report Number 202000612C – Revision 1 (Remeasured Thickness)

SUMMARY

Two samples were received for tensile testing.

The results are below.

TENSILE PROPERTIES – ROOM TEMPERATURE¹

	Tensile Strength (ksi)	Yield Strength (ksi)	Elongation (%)
Sample	174	133	5

¹Average of two replicates

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



Reviewed by



Lisa Wackowicz
Technical Operations Coordinator

Reviewed by

Jim Andrews, CWI
Manager, Mechanical & Machine Shop

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 requested by the customer. IMR's liability to the customer or any third party is limited at 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).

IMR TEST LABS

A Curtiss-Wright Business Unit
www.imrtest.com

131 Woodsedge Drive
Lansing, NY 14882
T: 1.607.533.7000 | F: 1.607.533.9210

January 22, 2020

TEST REPORT

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

IMR Report Number 202000612G

cc: Joe Madonna

SUMMARY

One sample was received for hardness testing.

PO Number
SVP200445

The results are below.

Date Received
January 13, 2020

HARDNESS

Description
Weldable Nickel

	HV ₁₀₀ ¹
Sample	431

Reference Date
January 2020

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



Reviewed by



Cheryl Downey
Senior Metallurgical Specialist

Reviewed by

Jim Andrews, CWI
Manager, Mechanical & Machine Shop

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 requested by the customer. IMR's liability to the customer or any third party is limited at 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).

TEST REPORT

IMR Report Number 202000612M

January 22, 2020

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

cc: Joe Madonna

PO Number
SVP200445

Date Received
January 13, 2020

Description
Weldable Nickel

Reference Date
January 2020

SUMMARY

One sample was received for chemical analysis.

The results are below.

CHEMISTRY

Element	Sample
Ni Alloy	99.98
Ni ¹	96.04
S ²	0.011

¹Determined by difference.

²Determined by combustion-infrared absorbance.

Results in weight percent unless otherwise indicated.

Method(s): CAP-017Q (ICP-AES) and ASTM E 1019-18 (Comb./IGF)



Reviewed by

Lisa M Wackowicz

Reviewed by

Mike St. Phillips



Lisa Wackowicz
Technical Operations Coordinator

Mike St. Phillips
Staff Chemist

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 requested by the customer. IMR's liability to the customer or any third party is limited at 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).