

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

MATERION BRUSH INC. 14710 W. Portage River South Road Elmore, OH 43416-9502

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CHEMICAL

Valid To: December 31, 2020 Certificate Number: 0339.01

In recognition of the successful completion of the A2LA evaluation process (including compliance to R223 – Specific Requirements – GE Aviation S-400 Accreditation Program), accreditation is granted to this laboratory to perform the following tests on <u>beryllium metal</u>, <u>beryllium oxide</u>, <u>beryllium hydroxide</u>, <u>beryllium basic carbonate</u>, <u>beryllium copper alloys</u>, <u>copper alloys</u>, <u>beryllium aluminum alloys</u>, <u>beryllium nickel alloys</u>, <u>beryllium containing ores</u>, and miscellaneous beryllium containing solutions and materials:

<u>Test Technology</u>: <u>Test Method(s)¹:</u>

Physical Property Determinations

Density ASTM B311; BW-ELM-AC 286

Particle Size Distribution BW-ELM-AC 861
Specific Surface Area BW-ELM-AC 335

Spectrochemical Analyses

Zn, Zr)

DC Arc Optical Emission Spectrography BW-ELM-AC 318

(Ag, Al, B, Ca, Co, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, Pb, Si, Ti, Zn)

(Ag, Al, Be, Co, Cr, Cu, Fe, Mg, Mn, Mo, Ni, Pb, Si, Ti, Zn, Zr)

Direct Current Plasma – Optical Emission Spectrometry ASTM E1097; BW-ELM-AC 172, 246,

(Ag, Al, Be, Ca, Co, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, P, Pb, Si, 326, 469, 470, 471

Sn, Th, Ti, Yt, Zn, Zr)

Direct Reading Vacuum Optical Emission Spectrometry BW-ELM-AC 3295

Flame Atomic Absorption Spectrophotometry BW-ELM-AC 241, 536, 944

(Ag, Al, Be, Ca, Co, Cr, Cu, Fe, Mg, Mn, Mo, Na, Ni, Pb, Si, Ti,

Inductively Coupled Plasma Optical Emission Spectrometry BW-ELM-AC 975

(Be)

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<u>Test Technology:</u> <u>Test Method(s)¹:</u>

Miscellaneous Determinations

Infrared Analysis for Carbon by Combustion	BW-ELM-AC 173, 429
Infrared Analysis for Oxygen by Inert Gas Fusion	BW-ELM-AC 171, 505, 506
Infrared Analysis for Sulfur by Combustion	BW-ELM-AC 229, 243, 429
Thermal Conductivity Analysis for Nitrogen by Inert Gas Fusion	BW-ELM-AC 505, 506
UV / VIS Photometric Titrations	BW-ELM-AC 638
Volumetric Titrations	BW-ELM-AC 174, 184

¹ The methods designated as BW-ELM-AC are internal test methods.

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Accredited Laboratory

A2LA has accredited

MATERION BRUSH INC.

Elmore, OH

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This laboratory also meets the requirements of R223 – Specific Requirements – GE Aviation S-400 Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SEAL MANUAL AZLA

Presented this 27th day of November 2018.

President and CEO

For the Accreditation Council Certificate Number 0339.01

Valid to December 31, 2020