

Certificate of Conformance  
SIFCO Process Solution

The solution identified below has been tested under controlled conditions and found to meet SIFCO Applied Surface Concepts specifications and Quality Assurance standards. This product does not contain, nor has it been contaminated with metallic mercury or mercury compounds. SIFCO ASC, LLC is a mercury free facility.

This product is free from all foreign materials that could result in foreign object damage to the equipment or process.

Capability of Meeting Specifications

When properly selected and applied, this solution will meet LGPS1102. This solution meets the requirements for: MIL-STD-865E, AMS2451/4D, ASTM B117-18, ASTM F519-18, BAC5854M, DPS9.89P & PS 13113F.

Product Code	<b>5070</b>
Product Description	<b>Cadmium LHE®</b>
Batch Number	<b>2205098</b>
Test Requirement	Actual Value
Specimen Type	1a1 Notch Bars per ASTM F519 Lot # 12H Sensitivity Pass Date: 01/21/2022 Notched Specimens per BAC5144 Lot # 164439-1-1-P Sensitivity Pass Date: 11/01/2021 2a rings per ASTM F519 Lot # 93117 Sensitivity Pass Date: 01/06/2022
pH	7.62 @ 20°C
Specific Gravity	1.250 @ 20°C
Metal Content	100.40 g/l
Hydrogen Embrittlement	CONFORMS
200 Hour Fracture Test	Pass AMS2451/4, MIL-STD-865, PS13113 and BAC5854 Report Number 22-74487, 22-74488
168 Hour Fracture Test	Pass DPS 9.89
Solution Appearance	Yellow
Solution Manufacturing Date	June 7, 2022
HE Certification Pass Date	June 17, 2022
Recommended Shelf Life	MIL-STD-865 and AMS2451/4: June 7, 2026 BAC 5854, DPS 9.89 and PS 13113 Retest Before: June 17, 2023



Quality Technician

06/21/2022

Date

"Specialists in Embrittlement Testing"

**Date:** June 20 2022  
**To:** SIFCO OH  
5708 Schaaf Road  
INDEPENDENCE, OH 44131  
**Test Report:** 22-74487  
**Reference P.O.:** PO00008737  
S/N 1,2,3,4  
**Test:** NOTCH TENSILE HYDROGEN EMBRITTLEMENT  
**Sample Identification:** SAMPLES A, B, C, D:  
**Job / SN:** SOLUTION CODE 5070, BATCH 2205098  
**Process:** BRUSH CADMIUM PLATE  
**PO Specification:** MIL-STD-865E, AMS 2451/4E, PS13113F  
**Test Method Scope:** ASTM F519-18  
**Receive Date:** Jun 09, 2022  
**Test Start Date:** Jun 09, 2022  
**Test End Date:** Jun 17, 2022  
**Sample Lot:** 12H **Mfg.:** GREEN  
**Notched Ultimate Tensile Load:** 9370 **Units:** LBS  
**Test Load:** 7028 **Units:** LBS  
**Results:** Conforms

The above identified notched tensile samples were subjected to a 200-hour sustained load test at a load of 75% of the Notch Ultimate Tensile Load (NUTL). Results above are applicable to submitted purchase order specifications. Additionally, results apply to the samples as received. Variances as applicable are noted at bottom right of report:

**Report Revision:** 1  
**Revision Description:** 1 - Original

**APPROVED**  
SMA 6/21/2022



Testing performed under direct supervision of approved signatories per 9001:2015 ISO 17025 Quality Manual PARA 7.8.

**Jeremy Riley**   **Joshua C...**   **Clint Williams**  
**Ops Mgr**   **Quality Mgr**   **Eng Tech**

Decision Rule: Per previously communicated and agreed, data has been supplied/reported as observed without accounting for measurement uncertainty.

Report invalid unless color seal present. Page 1 of 1



"Specialists in Embrittlement Testing"

**Date:** June 20 2022

**To:** SIFCO OH  
5708 Schaaf Road  
INDEPENDENCE, OH 44131

**Test Report:** 22-74488

**Reference P.O.:** PO00008736  
S/N 0031P, 0035P

**Test:** NOTCH TENSILE HYDROGEN EMBRITTLEMENT

**Sample Identification:** SAMPLES A, B:

**Job / SN:** SOLUTION CODE 5070, BATCH 2205098

**Process:** BRUSH CADMIUM PLATE 1A2

**PO Specification:** BAC 5854M, BAC 5144

**Test Method Scope:** ASTM F519-18

**Receive Date:** Jun 09, 2022  
**Test Start Date:** Jun 09, 2022  
**Test End Date:** Jun 17, 2022

**Sample Lot:** P **Mfg.:** ONAMAC  
**Notched Ultimate Tensile Load:** 15860 **Units:** LBS  
**Test Load:** 11895 **Units:** LBS

**Results:** Conforms

The above identified notched tensile samples were subjected to a 200-hour sustained load test at a load of 75% of the Notch Ultimate Tensile Load (NUTL). Results above are applicable to submitted purchase order specifications. Additionally, results apply to the samples as received. Variances as applicable are noted at bottom right of report:

<b>Report Revision:</b> 1	<b>Revision Description:</b> 1 - Original	One sample was metallographically cross-sectioned longitudinally across the notch and evaluated at 80-100X magnification for complete plating coverage of the notch. Conforms. Photo attached Samples Loaded on individual frames.
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Testing performed under direct supervision of approved signatories per OM-01 ISO 17025 Quality Manual PARA 7.8.

<b>Jeremy Riley</b> Ops Mgr	<b>Joshua Cox</b> Quality Mgr	<b>Clint Williams</b> Engr. Tech
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**APPROVED**  
SMA 6/21/2022

Decision Rule: Per previously communicated and agreed, data has been supplied/reported as observed without accounting for measurement uncertainty.

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"Specialists in Embrittlement Testing"

**Date:** June 20 2022  
**To:** **SIFCO OH**  
5708 Schaaf Road  
INDEPENDENCE, OH 44131

**Test Report:** 22-74488

**Reference P.O.:** PO00008736  
S/N 0031P

**Test:** **PHOTOMICROGRAPH**

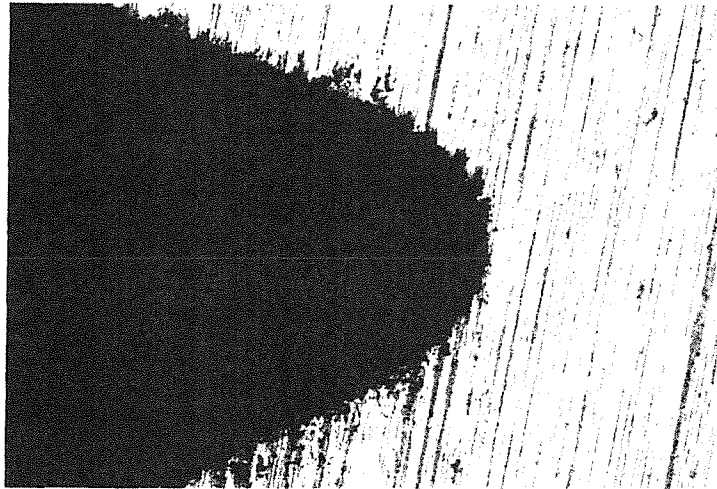
**Sample Identification:** SAMPLE A:

**Process:** BRUSH CADMIUM PLATE 1A2

**PO Specification:** BAC 5854M. BAC 5144

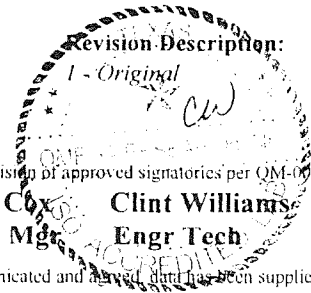
**Test Method Scope:** ASTM E3-11(2017)

**Receive Date:** Jun 09, 2022



**Report Revision:**

1



Testing performed under direct supervision of approved signatories per QM-001 ISO 17025 Quality Manual PARA 7.8.

**Jeremy Riley**   **Joshua Cox**   **Clint Williams**  
**Ops Mgr**   **Quality Mgr**   **Engr Tech**

Decision Rule: Per previously communicated and agreed, data has been supplied/reported as observed without accounting for measurement uncertainty.

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