

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

ACCU LABS, INC. 4831 S. Whipple Street Chicago, IL 60632

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CHEMICAL

Valid To: June 30, 2019 Certificate Number: 2558.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on <u>plating bath solutions and waste water</u>:

Plating Bath and Product Analysis

Titration

<u>Test</u>	Test Method
Additives and other Constituents in Plating Solutions by Titration	Accu-Labs Plating Analysis Manual, Titration Procedures
Metals in Plating Solutions by Complexometric Titration	Accu-Labs Plating Analysis Manual, Complexometric
	Procedures

Physical

Test	Test Method
Hull Cell Analysis	Accu-Labs SOP 900
Specific Gravity	ASTM D891 for Specific Gravity, Method A
Sulfate by Centrifuge	Accu-Labs SOP 580
Surface Tension	EPA Method 306B Determination of Surface Tension

Plating Bath Analysis and Environmental Testing

Metals by Atomic Absorption Flame

<u>Test</u>	Test Method(s)
Aluminum	EPA 202.1; SM 3500
Bismuth	SM 3500
Cadmium	EPA 213.1; SM 3500
Chromium	EPA 218.1; SM 3500
Cobalt	EPA 219.1; SM 3500
Copper	EPA 220.1; SM 3500
Iron	EPA 236.1; SM 3500

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<u>Test</u>	Test Method(s)
Lead	EPA 239.1; SM 3500
Nickel	EPA 249.1, 7520; SM 3500
Selenium	SM 3500
Silicon	SM 3500
Silver	EPA 272.1, 7760; SM 3500
Tin	EPA 282.1, 7870; SM 3500
Zinc	EPA 289.1, 7950; SM 3500

Environmental Testing

Test	Test Method(s)
Cyanide by Spectrophotometry	SM 4500 CN- Cyanide; EPA 335.2 & EPA 9014 Cyanide Titrimetric & Manual Spectrophotometry; EPA 9010C Cyanide Distillation
pH	ASTM E70 pH of Aqueous Solutions with Glass Electrode; SM 4500H+ pH Measurement; SM 9040C pH Electro Measurement

Material Corrosion Testing (Material Conditioning and Visual Examination)

<u>Test</u>	Test Method(s)
Corrosion & Salt Spray	ASTM B117 Practice for Operating Salt Spray (Fog); ISO 9227:2006(E) Neutral Salt Spray; MIL-DTL-81706, Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys, par. 4.5.1; MIL-DTL-5541 Chemical Conversion Coatings on Aluminum and Aluminum Alloys, par. 4.4.1; Delphi Specification Delphi DX900158
Hexavalent Chromium Spot Test	ISO 3613, par. 5.5

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Accredited Laboratory

A2LA has accredited

ACCU LABS INC.

Chicago, IL

for technical competence in the field of

Chemical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005

General requirements for the competence of testing and calibration laboratories. 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 8 January 2009).

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Presented this 4th day of October 2017.

President and CEO

For the Accreditation Council Certificate Number 2558.01 Valid to June 30, 2019