PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	PATENT SECURITY AGREEMENT

CONVEYING PARTY DATA

Name	Execution Date
ALENT, INC.	04/13/2016

RECEIVING PARTY DATA

Name:	BARCLAYS BANK PLC, AS COLLATERAL AGENT
Street Address:	745 SEVENTH AVENUE
City:	NEW YORK
State/Country:	NEW YORK
Postal Code:	10019

PROPERTY NUMBERS Total: 1

Property Type	Number
Patent Number:	6936644

CORRESPONDENCE DATA

Fax Number: (213)891-8763

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

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ATTORNEY DOCKET NUMBER:	030786-0725
NAME OF SUBMITTER:	RHONDA DELEON
SIGNATURE:	/Rhonda DeLeon/
DATE SIGNED:	04/15/2016

Total Attachments: 32
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PATENT SECURITY AGREEMENT

PATENT SECURITY AGREEMENT dated as of April 13, 2016 (as amended, restated, supplemented or otherwise modified from time to time, the "Patent Security Agreement"), made by each of the signatories hereto other than the Collateral Agent (as defined below) (together with any other entity that may become a party hereto as provided herein, the "Grantors"), in favor of BARCLAYS BANK PLC, as collateral agent (in such capacity and together with its successors, the "Collateral Agent") for (i) the banks and other financial institutions or entities (the "Lenders") from time to time parties to the Amended and Restated Credit Agreement dated as of October 31, 2013 (as amended, restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), among MacDermid Holdings, LLC, a Delaware limited liability company, MacDermid, Incorporated, a Connecticut corporation, Platform Acquisition Holdings Limited, the Lenders party thereto, and Barclays Bank PLC, as administrative agent and as collateral agent and (ii) the other Secured Parties.

WHEREAS, Grantors are party to that certain Amended and Restated Pledge and Security Agreement dated as of October 31, 2013 (as amended, restated, supplemented or otherwise modified from time to time, the "Pledge and Security Agreement") between each of the Grantors and the other grantors party thereto and the Collateral Agent pursuant to which the Grantors are required to execute and deliver this Patent Security Agreement.

NOW, THEREFORE, in consideration of the premises and to induce the Secured Parties to enter into the Credit Agreement, the Grantors hereby agree with the Collateral Agent, as follows:

SECTION 1. Defined Terms. Unless otherwise defined herein, capitalized terms have the meaning given to them in the Pledge and Security Agreement.

SECTION 2. Grant of Security Interest in Patent Collateral.

(a) Each Grantor hereby grants to the Collateral Agent, for the ratable benefit of the Secured Parties, a security interest in all of the following property of such Grantor, in each case, wherever located and now owned or at any time hereafter acquired by such Grantor or in which such Grantor has or at any time in the future may acquire any right, title and interest (collectively, the "Patent Collateral"), as collateral security for the prompt and complete payment and performance when due (whether at the stated maturity, by acceleration, or otherwise) of such Grantor's Obligations:

(i) all letters of patent of the United States, any other country, union of countries or any political subdivision of any of the foregoing, all reissues and extensions thereof, including any of the foregoing listed on Schedule I hereto,

(ii) all applications for letters of patent of the United States or any other country or union of countries or any political subdivision of any of the foregoing and all divisions, continuations and continuations-in-part thereof, including any of the foregoing listed on Schedule I hereto,

(iii) the right to, and to obtain, any reissues or extensions of the foregoing,

(iv) the right to sue or otherwise recover for past, present and future infringement of any of the foregoing, and

(v) all Proceeds of the foregoing, including license fees, royalties, income, payments, claims, damages and proceeds of suit;

provided that notwithstanding any other provision set forth in this Section 2, this Patent Security Agreement shall not, at any time, constitute a grant of a security interest in any property that is, at such time, an Excluded Asset.

SECTION 3. The security interest granted pursuant to this Patent Security Agreement is granted in conjunction with the security interest granted to the Collateral Agent for the Secured Parties pursuant to the Pledge and Security Agreement and each Grantor hereby acknowledges and affirms that the rights and remedies of the Collateral Agent with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Pledge and Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Pledge and Security Agreement, the provisions of the Pledge and Security Agreement shall control.

SECTION 4. APPLICABLE LAW. **THIS PATENT SECURITY AGREEMENT AND ANY DISPUTE, CLAIM OR CONTROVERSY ARISING OUT OF OR RELATING TO THIS PATENT SECURITY AGREEMENT (WHETHER ARISING IN CONTRACT, TORT OR OTHERWISE) SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK WITHOUT REGARD TO CONFLICTS OF LAW RULES THAT WOULD RESULT IN THE APPLICATION OF A DIFFERENT GOVERNING LAW (OTHER THAN ANY MANDATORY PROVISIONS OF THE UCC RELATING TO THE LAW GOVERNING PERFECTION AND EFFECT OF PERFECTION OR PRIORITY OF THE SECURITY INTERESTS).**

SECTION 5. Counterparts. This Patent Security Agreement may be executed by one of more of the parties to this Patent Security Agreement on any number of separate counterparts (including by facsimile and electronic PDF delivery), and all of said counterparts taken together shall be deemed to constitute one and the same instrument.

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IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

ALPHA METALS, INC.

By: ______________________
Name: Frank Monteiro
Title: Vice President

ENTHONE INC.

By: ______________________
Name: Frank Monteiro
Title: President

ALENT, INC.

By: ______________________
Name: Frank Monteiro
Title: President

Accepted and Agreed:

BARCLAYS BANK PLC,
as Collateral Agent

By:______________________
Name:
Title:

IN WITNESS WHEREOF, each Grantor has caused this Patent Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

ALPHA METALS, INC.

By: ______________________________

Name: Frank Monteiro
Title: Vice President

ENTHONE INC.

By: ______________________________

Name: Frank Monteiro
Title: President

ALENT, INC.

By: ______________________________

Name: Frank Monteiro
Title: President

Accepted and Agreed:

BARCLAYS BANK PLC,
as Collateral Agent

By: ______________________________
Name: Christopher R. Lee
Title: Vice President

SCHEDULE I to
the Patent Security Agreement

PATENTS AND PATENT APPLICATIONS

U.S. Patents

Title	**App. No.** **App. Date**	**Patent No.** **Issue Date** **(Publication No.)**	**Owner**
Bismuth coating protection for copper	08704510 12/26/1996	6090493 7/18/2000	Alpha Metals, Inc.
Epoxy based, VOC-free soldering flux	08785699 1/17/1997	5904782 5/18/1999	Alpha Metals, Inc.
Process for silver plating in printed circuit board manufacture	08932392 9/17/1997	5955141 9/21/1999 Reissued as RE45279	Alpha Metals, Inc.
Snap cure adhesive based on anhydride/epoxy resins	09015164 1/29/1998	6096808 8/1/2000	Alpha Metals, Inc.
Flip chip with integrated flux and underfill	09067381 4/27/1998	6265776 7/24/2001	Alpha Metals, Inc.
Stencil incorporating electronic tag	09231490 1/14/1999	6123024 9/26/2000	Alpha Metals, Inc.
Flip chip with integrated flux and underfill	09266232 3/10/1999	6194788 2/27/2001	Alpha Metals, Inc.
Flip chip with integrated mask and underfill	09266166 3/10/1999	6228678 5/8/2001	Alpha Metals, Inc.
Process for silver plating in printed circuit board manufacture	09282729 3/31/1999	6319543 11/20/2001 Reissued as RE45175	Alpha Metals, Inc.
Post-treatment for copper on printed circuit boards	09345675 6/30/1999	6294220 9/25/2001	Alpha Metals, Inc.
Wafer coating method for flip chips	09395553 9/14/1999	6323062 11/27/2001	Alpha Metals, Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Flip chip having integral mask and underfill providing two-stage bump formation	09395558 9/14/1999	6228681 5/8/2001	Alpha Metals, Inc.
Soldering flux	09728264 12/1/2000	6599372 7/29/2003	Alpha Metals, Inc.
Low-residue, low-solder-ball flux	09834196 4/12/2001	6524398 2/25/2003	Alpha Metals, Inc.
Soldering flux vehicle additive and fine pitch printing method	10036952 12/21/2001	6936115 8/30/2005	Alpha Metals, Inc.
Thermal interface material and heat sink configuration	10151741 5/20/2002	6653741 11/25/2003	Alpha Metals, Inc.
Thermoplastic fluxing underfill composition and method	10458925 6/11/2003	7166491 1/23/2007	Alpha Metals, Inc.
Rapid surface cooling of solder droplets by flash evaporation	10363420 8/15/2003	7097806 8/29/2006	Alpha Metals, Inc.
Thermal interface material and solder preforms	10722288 11/25/2003	7187083 3/6/2007	Alpha Metals, Inc.
Underfill fluxing curative	10817138 4/2/2004	7213739 5/8/2007	Alpha Metals, Inc.
Method of applying a pattern of particles to a substrate	10888286 7/9/2004	7585549 9/8/2009	Alpha Metals, Inc.
Coating solder metal particles with a charge director medium	10888619 7/9/2004	7413771 8/19/2008	Alpha Metals, Inc.
Coated stencil with reduced surface tension	10899679 7/26/2004	7093746 8/22/2006	Alpha Metals, Inc.
Low voiding no flow fluxing underfill for electronic devices	10911908 8/5/2004	7247683 7/24/2007	Alpha Metals, Inc.
Solder preforms for use in electronic assembly	11012457 12/15/2004	7533793 5/19/2009	Alpha Metals, Inc.
Preparation of metallic particles for electrokinetic or electrostatic deposition	11065764 2/25/2005	7413805 8/19/2008	Alpha Metals, Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Mask and method for electrokinetic deposition and patterning process on substrates	11419128 5/18/2006	7678255 3/16/2010	Alpha Metals, Inc.
Particles and inks and films using them	11462089 8/3/2006	7968008 6/28/2011	Alpha Metals, Inc.
Thermal interface material and solder preforms	11682729 3/6/2007	7663242 2/16/2010	Alpha Metals, Inc.
Solvent systems for metals and inks	11857818 9/19/2007	8597548 12/3/2013	Alpha Metals, Inc.
Conductive patterns and methods of using them	11857871 9/19/2007	(20080137316)	Alpha Metals, Inc.
MATERIALS FOR USE WITH INTERCONNECTS OF ELECTRICAL DEVICES AND RELATED METHODS	11873838 10/17/2007	(20080173698)	Alpha Metals, Inc.
Solder alloy	12036497 2/25/2008	8641964 2/4/2014	Alpha Metals, Inc.
Reducing joint embrittlement in lead-free soldering processes	12036604 2/25/2008	8191757 6/5/2012	Alpha Metals, Inc.
ELECTRICAL CONTACTS	12052104 3/20/2008	(20080245765)	Alpha Metals, Inc.
Methods for producing electrical conductors	12052166 3/20/2008	8312623 11/20/2012	Alpha Metals, Inc.
Methods of attaching a die to a substrate	12175375 7/17/2008	8555491 10/15/2013	Alpha Metals, Inc.
Electrical conductors and methods of making and using them	12175381 7/17/2008	8304062 11/6/2012	Alpha Metals, Inc.
Solder alloy	11720578 7/25/2008	9221131 12/29/2015	Alpha Metals, Inc.
Metallic particles for electrokinetic or electrostatic deposition	12191691 8/14/2008	8252417 8/28/2012	Alpha Metals, Inc.

Title	**App. No.** **App. Date**	**Patent No.** **Issue Date** **(Publication No.)**	**Owner**
Coated solder metal particles	12191710 8/14/2008	7655304 2/2/2010	Alpha Metals, Inc.
Electroformed stencils for solar cell front side metallization	12201654 8/29/2008	7749883 7/6/2010	Alpha Metals, Inc.
FLUX FORMULATIONS	12497065 7/2/2009	(20100139952)	Alpha Metals, Inc.
Mono-acid hybrid conductive composition and method	12567523 9/25/2009	8564140 10/22/2013	Alpha Metals, Inc.
Particles and inks and films using them	13168465 6/24/2011	9217088 12/22/2015	Alpha Metals, Inc.
SINTERING MATERIALS AND ATTACHMENT METHODS USING SAME	13287820 11/2/2011	(20120114927)	Alpha Metals, Inc.
Process for silver plating in printed circuit board manufacture	13471203 5/14/2012	RE45279 12/9/2014	Alpha Metals, Inc.
Process for silver plating in printed circuit board manufacture	13655159 10/18/2012	RE45175 10/7/2014	Alpha Metals, Inc.
METHODS FOR ATTACHMENT AND DEVICES PRODUCED USING THE METHODS	14027530 9/16/2013	(20140153203)	Alpha Metals, Inc.
CONDUCTIVE COMPOSITIONS AND METHODS OF USING THEM	14058553 10/21/2013	(20140153167)	Alpha Metals, Inc.
FLUX FORMULATIONS	14077995 11/12/2013	(20140060703)	Alpha Metals, Inc.
SOLVENT SYSTEMS FOR METALS AND INKS	14095559 12/3/2013	(20140186524)	Alpha Metals, Inc.
HIGH IMPACT TOUGHNESS SOLDER ALLOY	14236432 3/21/2014	(20140219711)	Alpha Metals, Inc.
SOLDER COMPOSITIONS	14236480 3/21/2014	(20140199115)	Alpha Metals, Inc.
SYSTEMS AND METHODS FOR VOID REDUCTION IN A SOLDER JOINT	14347035 3/25/2014	(20140328039)	Alpha Metals, Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
SOLDER PREFORMS AND SOLDER ALLOY ASSEMBLY METHODS	14386601 9/19/2014	(20150078810)	Alpha Metals, Inc.
LEAD-FREE AND ANTIMONY-FREE TIN SOLDER RELIABLE AT HIGH TEMPERATURES	14434470 4/9/2015	(20150266137)	Alpha Metals, Inc.
SINTERING POWDER	14438888 4/28/2015	(20150353804)	Alpha Metals, Inc.
LEAD-FREE AND ANTIMONY-FREE TIN SOLDER RELIABLE AT HIGH TEMPERATURES	14698450 4/28/2015	(20150224604)	Alpha Metals, Inc.
LEAD-FREE AND ANTIMONY-FREE TIN SOLDER RELIABLE AT HIGH TEMPERATURES	14878056 10/8/2015	(20160023309)	Alpha Metals, Inc.
Releasable microcapsule and adhesive curing system using the same	10271511 10/16/2002	6936644 8/30/2005	Alent, Inc.
Process for the production of corrosion-protected metallic materials and materials obtainable therewith	08611679 3/6/1996	5779818 7/14/1998	Enthone Inc.
Corrosion inhibiting multilayer clothing	08591439 3/11/1996	6015613 1/18/2000	Enthone Inc.
Alkoxylated dimercaptans as copper additives and de- polarizing additives	08656410 5/30/1996	5730854 3/24/1998	Enthone Inc.
Corrosion resistant paint	08888274 7/3/1997	5853621 12/29/1998	Enthone Inc.
Process for the production of metallized materials	08875480 7/29/1997	5846606 12/8/1998	Enthone Inc.
Printed circuit board manufacture	08939656 9/29/1997	6395329 5/28/2002	Enthone Inc.
Electroless nickel cobalt phosphorous composition and plating process	08963999 11/4/1997	6146702 11/14/2000	Enthone Inc.
Surface dopants as blend compatiblizers in conjugated polymers	08996925 12/23/1997	5911918 6/15/1999	Enthone Inc.
Ductility agents for nickel-tungsten alloys	09046869 3/24/1998	6045682 4/4/2000	Enthone Inc.

Title	**App. No.** **App. Date**	**Patent No.** **Issue Date** **(Publication No.)**	**Owner**
Process for selective deposition of OSP coating on copper, excluding deposition on gold	09383718 8/26/1999	6524644 2/25/2003	Enthone Inc.
Water soluble brighteners for zinc and zinc alloy electrolytes	09394839 9/13/1999	6238542 5/29/2001	Enthone Inc.
Bismuth coating protection for copper	09403900 1/18/2000	6331201 12/18/2001	Enthone Inc.
Chemical compounds made of intrinsically conductive polymers and metals	09463453 4/17/2000	6632380 10/14/2003	Enthone Inc.
Electroplating chemistry for the CU filling of submicron features of VLSI/ULSI interconnect	09716975 11/20/2000	6776893 8/17/2004	Enthone Inc.
Process for metallizing a plastic surface	09831008 5/3/2001	6712948 3/30/2004	Enthone Inc.
Method for coating workpieces	09786300 7/13/2001	6635165 10/21/2003	Enthone Inc.
Defect reduction in electrodeposited copper for semiconductor applications	10091106 3/5/2002	7316772 1/8/2008	Enthone Inc.
System for the electrodialytic regeneration of an electroless bath electrolyte	10092976 3/7/2002	6723218 4/20/2004	Enthone Inc.
Solderability enhancement by silver immersion printed circuit board manufacture	10099936 3/13/2002	9072203 6/30/2015	Enthone Inc.
Printed circuit board manufacture	10118417 4/8/2002	6860925 1/27/2015	Enthone Inc.
Process for the non-galvanic tin plating of copper or copper alloys	10129998 7/31/2002	6821323 11/23/2004	Enthone Inc.
Removal of coagulates from a non-glare electroplating bath	10148090 10/3/2002	6797141 9/28/2004	Enthone Inc.
Chromium alloy coating and a method and electrolyte for the deposition thereof	10169959 10/3/2002	6837981 1/4/2005	Enthone Inc.
Copper bath composition for electroless and/or electrolytic filling of vias and trenches for integrated circuit fabrication	10358596 2/5/2003	6897152 5/24/2005	Enthone Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Adhesion promotion in printed circuit boards	10619198 7/14/2003	7232478 6/19/2007	Enthone Inc.
Process and electrolytes for deposition of metal layers	10678601 10/3/2003	7846503 12/7/2010	Enthone Inc.
Capping of metal interconnects in integrated circuit electronic devices	10867346 6/14/2004	7268074 9/11/2007	Enthone Inc.
Silver plating in electronics manufacture	10902398 7/29/2004	8349393 1/8/2013	Enthone Inc.
Copper electrodeposition in microelectronics	10963369 10/12/2004	8002962 8/23/2011	Enthone Inc.
Maintenance of metallization baths	11039088 1/19/2005	8057678 11/15/2011	Enthone Inc.
Cobalt and nickel electroless plating in microelectronic devices	11085304 3/21/2005	7332193 2/19/2008	Enthone Inc.
Method for treating laser-structured plastic surfaces	11102038 4/8/2005	7578888 8/25/2009	Enthone Inc.
Defectivity and process control of electroless deposition in microelectronics applications	11230912 9/20/2005	7410899 8/12/2008	Enthone Inc.
Defectivity and process control of electroless deposition in microelectronics applications	11243624 10/5/2005	7611987 11/3/2009	Enthone Inc.
Defectivity and process control of electroless deposition in microelectronics applications	11243631 10/5/2005	7611988 11/3/2009	Enthone Inc.
Defectivity and process control of electroless deposition in microelectronics applications	11243876 10/5/2005	7615491 11/10/2009	Enthone Inc.
Copper electrodeposition in microelectronics	11272999 11/14/2005	7303992 12/4/2007	Enthone Inc.
Insoluble anode	11279512 4/12/2006	7666283 2/23/2010	Enthone Inc.
Method for supplying a plating composition with deposition metal ion during a plating operation	11420339 5/25/2006	7846316 12/7/2010	Enthone Inc.
METHOD FOR DIRECT METALLIZATION OF NON-CONDUCTING SUBSTRATES	11423474 6/12/2006	(20060280872)	Enthone Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Tin-silver solder bumping in electronics manufacture	11463355 8/9/2006	7713859 5/11/2010	Enthone Inc.
Manufacture of electroless cobalt deposition compositions for microelectronics applications	11549775 10/16/2006	7704306 4/27/2010	Enthone Inc.
Method for etching non-conductive substrate surfaces	11554100 10/30/2006	7578947 8/25/2009	Enthone Inc.
Method for removing impurities from a metal deposition process solution	11563335 11/27/2006	8202431 6/19/2012	Enthone Inc.
Organic solderability preservative comprising high boiling temperature alcohol	11620857 1/8/2007	7794531 9/14/2010	Enthone Inc.
Metallic surface enhancement	11736647 4/18/2007	7883738 2/8/2011	Enthone Inc.
Direct metallization of electrically non-conductive polyimide substrate surfaces	11756048 5/31/2007	7815785 10/19/2010	Enthone Inc.
Adhesion promotion in printed circuit boards	11759456 6/7/2007	7682432 3/23/2010	Enthone Inc.
Adhesion promotion in printed circuit boards	11759624 6/7/2007	8142840 3/27/2012	Enthone Inc.
CORROSION PROTECTION OF BRONZES	11766642 6/21/2007	(20080314283)	Enthone Inc.
Electrolyte composition and method for the deposition of a zinc-nickel alloy layer on a cast iron or steel substrate	11778011 7/13/2007	8435398 5/7/2013	Enthone Inc.
Copper electrodeposition in microelectronics	11846385 8/28/2007	7815786 10/19/2010	Enthone Inc.
Capping of metal interconnects in integrated circuit electronic devices	11852513 9/10/2007	7393781 7/1/2008	Enthone Inc.
Anti-tarnish coatings	11944287 11/21/2007	7972655 7/5/2011	Enthone Inc.
Defect reduction in electrodeposited copper for semiconductor applications	11971061 1/8/2008	9222188 12/29/2015	Enthone Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Electrolyte and process for depositing a matt metal layer	12168680 7/7/2008	8192607 6/5/2012	Enthone Inc.
Copper metallization of through silicon via	12185641 8/4/2008	7670950 3/2/2010	Enthone Inc.
Surface preparation process for damascene copper deposition	12238139 9/25/2008	7998859 8/16/2011	Enthone Inc.
Composite coatings for whisker reduction	12254207 10/20/2008	8226807 7/24/2012	Enthone Inc.
Self assembled molecules on immersion silver coatings	12268144 11/10/2008	8216645 7/10/2012	Enthone Inc.
Method and composition for electrodeposition of copper in microelectronics with dipyridyl-based levelers	12324335 11/26/2008	8388824 3/5/2013	Enthone Inc.
METHOD AND DEVICE FOR COATING SUBSTRATE SURFACES	12278256 12/15/2008	(20090324804)	Enthone Inc.
Deposition of conductive polymer and metallization of non-conductive substrates	12440355 3/25/2009	8366901 2/5/2013	Enthone Inc.
Copper deposition for filling features in manufacture of microelectronic devices	12446176 4/17/2009	7968455 6/28/2011	Enthone Inc.
Cyanide-free electrolyte composition, and method for the deposition of silver or silver alloy layers on substrates	12445049 10/13/2009	9212427 12/15/2015	Enthone Inc.
Immersion tin silver plating in electronics manufacture	12607375 10/28/2009	9175400 11/3/2015	Enthone Inc.
Galvanic bath and process for depositing zinc-based layers	12617202 11/12/2009	8282806 10/9/2012	Enthone Inc.
Metallic surface enhancement	12596559 2/2/2010	8741390 6/3/2014	Enthone Inc.
Electrolytic deposition of metal-based composite coatings comprising nano-particles	12747681 7/19/2010	9217205 12/22/2015	Enthone Inc.
CORROSION PROTECTION OF BRONZES	12665908 8/9/2010	(20100319572)	Enthone Inc.
Chromium-free pickle for plastic surfaces	12672980 8/12/2010	9023228 5/5/2015	Enthone Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Cyanide free electrolyte composition for the galvanic deposition of a copper layer	13054048 4/18/2011	8808525 8/19/2014	Enthone Inc.
METHOD FOR DEPOSITION OF HARD CHROME LAYERS	13125622 4/22/2011	(20110198226)	Enthone Inc.
ELECTROLYTE AND METHOD FOR DEPOSITION OF MATTE METAL LAYER	13003398 6/15/2011	(20110233065)	Enthone Inc.
Anti-tarnish coatings	13176411 7/5/2011	8703243 4/22/2014	Enthone Inc.
Method for the post-treatment of metal layers	13129300 7/25/2011	9222189 12/29/2015	Enthone Inc.
Copper electrodeposition in microelectronics	13214525 8/22/2011	8608933 12/17/2013	Enthone Inc.
Method for the deposition of a metal layer comprising a beta-amino acid	13382131 3/7/2012	8962070 2/24/2015	Enthone Inc.
Adhesion promotion in printed circuit boards	13431560 3/27/2012	9040117 5/26/2015	Enthone Inc.
ELECTROLYTE AND PROCESS FOR DEPOSITING A MATT METAL LAYER	13487665 6/4/2012	(20120298519)	Enthone Inc.
Self assembled molecules on immersion silver coatings	13545030 7/10/2012	8323741 12/4/2012	Enthone Inc.
Composite coatings for whisker reduction	13556522 7/24/2012	8906217 12/9/2014	Enthone Inc.
ADHESION PROMOTION IN PRINTED CIRCUIT BOARDS	13558019 7/25/2012	(20140030425)	Enthone Inc.
COPPER FILLING OF THROUGH SILICON VIAS	13699910 12/12/2012	(20130199935)	Enthone Inc.
Silver plating in electronics manufacture	13735779 1/7/2013	8986434 3/24/2015	Enthone Inc.
CORROSION-PROTECTIVE WAX COMPOSITION CONTAINING POLYANILINE IN A DOPED FORM AND A LIQUID PARAFFIN	13638442 1/9/2013	(20130130056)	Enthone Inc.
METHOD FOR DIRECT METALLIZATION OF NON-CONDUCTIVE SUBSTRATES	13636087 2/4/2013	(20130316082)	Enthone Inc.

Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Method and composition for electrodeposition of copper in microelectronics with dipyridyl-based levelers	13785946 3/5/2013	8771495 7/8/2014	Enthone Inc.
COPPER ELECTRODEPOSITION IN MICROELECTRONICS	14108954 12/17/2013	(20140102909)	Enthone Inc.
PROCESS FOR FILLING VIAS IN THE MICROELECTRONICS	13981974 1/8/2014	(20140120722)	Enthone Inc.
APPARATUS FOR ELECTROCHEMICAL DEPOSITION OF A METAL	14234080 1/24/2014	(20140158545)	Enthone Inc.
COMPOSITION AND METHOD FOR THE DEPOSITION OF CONDUCTIVE POLYMERS ON DIELECTRIC SUBSTRATES	13882330 2/5/2014	(20140138253)	Enthone Inc.
AQUEOUS SOLUTION AND METHOD FOR THE FORMATION OF A PASSIVATION LAYER	14001360 2/10/2014	(20140154525)	Enthone Inc.
AQUEOUS ACTIVATOR SOLUTION AND PROCESS FOR ELECTROLESS COPPER DEPOSITION ON LASER-DIRECT STRUCTURED SUBSTRATES	14350971 4/10/2014	(20140255600)	Enthone Inc.
METHOD AND COMPOSITION FOR ELECTRODEPOSITION OF COPPER IN MICROELECTRONICS WITH DIPYRIDYL-BASED LEVELERS	14325601 7/8/2014	(20140322912)	Enthone Inc.
Beta-amino acid comprising plating formulation	14630268 2/24/2015	9249513 2/2/2016	Enthone Inc.
SILVER PLATING IN ELECTRONICS MANUFACTURE	14666990 3/24/2015	(20150257264)	Enthone Inc.
CHROMIUM-FREE PICKLE FOR PLASTIC SURFACES	14702020 5/1/2015	(20160024381)	Enthone Inc.
ELECTRODEPOSITION OF SILVER WITH FLUOROPOLYMER NANOPARTICLES	14776879 9/15/2015	(20160032479)	Enthone Inc.

Foreign Patents

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Canada	EPOXY-BASED, VOC-FREE SOLDERING FLUX	CA2221961A 5/24/1996	CA2221961 2/5/2008	Alpha Metals, Inc.
Canada	SOLDERING FLUX	CA2393399A 12/1/2000	CA2393399 11/22/2011	Alpha Metals, Inc.
Canada	THERMAL INTERFACE MATERIAL AND HEAT SINK CONFIGURATION	CA2447978A 5/20/2002	CA2447978 4/26/2011	Alpha Metals, Inc.
Canada	THERMAL INTERFACE MATERIAL AND SOLDER PREFORMS	CA2547358A 11/25/2003	CA2547358 8/6/2013	Alpha Metals, Inc.
Canada	PARTICLES AND INKS AND FILMS USING THEM	CA2659028A 8/3/2007	CA2659028C 10/20/2015	Alpha Metals, Inc.
Canada	SOLVENT SYSTEMS FOR METALS AND INKS	CA2663688A 9/19/2007	CA2663688C 11/17/2015	Alpha Metals, Inc.
Canada	FLUX FORMULATIONS	CA2677102A 10/11/2007	CA2677102 7/17/2008	Alpha Metals, Inc.
Canada	MATERIALS FOR USE WITH INTERCONNECTS OF ELECTRICAL DEVICES AND RELATED METHODS	CA2666363A 10/17/2007	CA2666363 4/24/2008	Alpha Metals, Inc.
Canada	CONDUCTIVE PATTERNS AND METHODS OF USING THEM	CA2665219A 3/18/2008	CA2665219 2/12/2009	Alpha Metals, Inc.
Canada	SOLDER COMPOSITIONS	CA2842762A 8/2/2012	CA2842762 2/7/2013	Alpha Metals, Inc.

Country	**Title**	**App. No.** **App. Date**	**Patent No.** **Issue Date** **(Publication No.)**	**Owner**
Canada	HIGH IMPACT TOUGHNESS SOLDER ALLOY	CA2843509A 8/2/2012	CA2843509 2/7/2013	Alpha Metals, Inc.
Canada	SYSTEMS AND METHODS FOR VOID REDUCTION IN A SOLDER JOINT	CA2849459A 9/25/2012	CA2849459 4/4/2013	Alpha Metals, Inc.
Canada	METHOD FOR THE DEPOSITION OF A CHROMIUM ALLOY	CA2396946A 11/3/2001	CA2396946 2/19/2008	Enthone Inc.
Europe Designated countries: DE FR GB NL	SOLDERING FLUX	EP2000980918A 12/1/2000	EP1237677B1 8/24/2005	Alpha Metals, Inc.
Europe Designated countries: DE FR GB NL	Thermal interface material and heat sink configuration	EP2002747847A 5/20/2002	EP1404883B1 7/16/2014	Alpha Metals, Inc.
Europe	THERMAL INTERFACE MATERIAL AND SOLDER PREFORMS	EP2003769013A 11/25/2003	EP1695382A1 8/30/2006	Alpha Metals, Inc.
Europe Designated country: DE	Particles and Inks and Films Using Them	EP2011172280A 8/3/2007	EP2380688B1 6/4/2014	Alpha Metals, Inc.
Europe Designated country: DE	METHODS OF PREPARING SILVER PARTICLES, SILVER PARTICLE INKS AND SILVER PARTICLE FILMS	EP2007813754A 8/3/2007	EP2066470B1 10/9/2013	Alpha Metals, Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe	SOLVENT SYSTEMS FOR METALS AND INKS	EP2007842796A 9/19/2007	EP2064000A2 6/3/2009	Alpha Metals, Inc.
Europe	FLUX FORMULATIONS	EP2007844124A 10/11/2007	EP2106318A2 10/7/2009	Alpha Metals, Inc.
Europe	MATERIALS FOR USE WITH INTERCONNECTS OF ELECTRICAL DEVICES AND RELATED METHODS	EP2007844348A 10/17/2007	EP2081729A2 7/29/2009	Alpha Metals, Inc.
Europe	CONDUCTIVE PATTERNS AND METHODS OF USING THEM	EP2007872304A 3/18/2008	EP2174324A1 4/14/2010	Alpha Metals, Inc.
Europe Designated country: DE	Method of manufacturing electrical contacts	EP2008250999A 3/20/2008	EP1998602B1 3/5/2014	Alpha Metals, Inc.
Europe Designated country: DE	Devices & methods for producing & using electrical conductors	EP2008251016A 3/20/2008	EP1975946B1 7/31/2013	Alpha Metals, Inc.
Europe	METHODS FOR ATTACHMENT AND DEVICES PRODUCED USING THE METHODS	EP2008782059A 7/18/2008	EP2171755A1 4/7/2010	Alpha Metals, Inc.
Europe	ELECTRICAL CONDUCTORS AND METHODS OF MAKING AND USING THEM	EP2008782067A 7/18/2008	EP2173496A1 4/14/2010	Alpha Metals, Inc.
Europe	ELECTROFORMED STENCILS FOR SOLAR CELL FRONT SIDE METALLIZATION	EP2008831807A 9/8/2008	EP2191330A1 6/2/2010	Alpha Metals, Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe	CONDUCTIVE COMPOSITIONS AND METHODS OF USING THEM	EP2009793030A 9/25/2009	EP2334728A2 6/22/2011	Alpha Metals, Inc.
Europe	SINTERING MATERIALS AND ATTACHMENT METHODS USING SAME	EP2011782731A 11/2/2011	EP2636043A2 9/11/2013	Alpha Metals, Inc.
Europe	HIGH IMPACT TOUGHNESS SOLDER ALLOY	EP2012756540A 8/2/2012	EP2739432A1 6/11/2014	Alpha Metals, Inc.
Europe	SOLDER COMPOSITIONS	EP2012756541A 8/2/2012	EP2739431A2 6/11/2014	Alpha Metals, Inc.
Europe	SYSTEMS AND METHODS FOR VOID REDUCTION IN A SOLDER JOINT	EP2012837297A 9/25/2012	EP2761979A4 8/5/2015	Alpha Metals, Inc.
Europe	SOLDER PREFORMS AND SOLDER ALLOY ASSEMBLY METHODS	EP2013764662A 3/15/2013	EP2834037A1 2/11/2015	Alpha Metals, Inc.
Europe	LEAD-FREE AND ANTIMONY-FREE TIN SOLDER RELIABLE AT HIGH TEMPERATURES	EP2013777315A 10/9/2013	EP2773484A1 9/10/2014	Alpha Metals, Inc.
Europe	SINTERING POWDER	EP2013786715A 10/29/2013	EP2911979A1 9/2/2015	Alpha Metals, Inc.
Europe Designated countries: DE FR	PROCESS FOR THE NON-GALVANIC TIN PLATING OF COPPER OR COPPER ALLOYS	EP2000978519A 11/9/2000	EP1230034B1 9/8/2010	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe Designated countries: DE FR GB NL	Process for electrolytic deposition from a chrome containing solution	EP2000124672A 11/11/2000	EP1205582B1 8/20/2008	Enthone Inc.
Europe Designated countries: DE FR	PROCESS FOR THE EXTENDED USE OF ELECTROLYTES	EP2000980265A 11/21/2000	EP1252374B1 4/23/2008	Enthone Inc.
Europe Designated countries: DE NL	System for the electrolytic regeneration of a bath for electroless plating	EP2001105765A 3/8/2001	EP1239057B1 11/14/2007	Enthone Inc.
Europe Designated countries: DE FR GB NL	Process and electrolyte for the galvanic deposition of bronze	EP200222718A 10/11/2002	EP1408141B1 12/17/2014	Enthone Inc.
Europe Designated countries: DE FR GB	Process for electroless plating of metals	EP200313706A 6/17/2003	EP1413646B2 9/24/2014	Enthone Inc.
Europe	ADHESION PROMOTION IN PRINTED CIRCUIT BOARDS	EP2003749759A 9/18/2003	EP1664382A1 6/7/2006	Enthone Inc.
Europe Designated countries: DE FR	Process for activating a plastic substrate to be electroplated	EP200328259A 12/10/2003	EP1441045B1 11/3/2010	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe	COPPER ELECTRODEPOSITION IN MICROELECTRONICS	EP2004813876A 12/13/2004	EP1697561A1 9/6/2006	Enthone Inc.
Europe Designated countries: DE FR GB NL	Process for the maintenance of metallization baths	EP2005435A 1/12/2005	EP1557482B1 6/6/2012	Enthone Inc.
Europe	DISPERSIONS OF INTRINSICALLY CONDUCTIVE POLYMERS, AND METHODS FOR THE PRODUCTION THEREOF	EP2005706959A 1/21/2005	EP1706431A1 10/4/2006	Enthone Inc.
Europe Designated countries: DE	Apparatus for metallization	EP20053009A 2/12/2005	EP1690964B1 2/20/2008	Enthone Inc.
Europe	SILVER PLATING IN ELECTRONICS MANUFACTURE	EP2005713971A 2/23/2005	EP1781421A1 5/9/2007	Enthone Inc.
Europe	Process for the treatment of laser-structured plastic surfaces	EP20057718A 4/8/2005	EP1584708A3 7/26/2006	Enthone Inc.
Europe Designated countries: DE FR GB NL	Method and apparatus for adjusting the ion concentration of an electrolytic solution	EP200511287A 5/25/2005	EP1726683B1 4/9/2008	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe Designated countries: DE FR GB NL	CORROSION RESISTANCE ENHANCEMENT OF TIN SURFACES	EP2005757748A 6/2/2005	EP1771603B1 5/6/2015	Enthone Inc.
Europe Designated countries: DE FR GB NL	Article with a coating of an electrically conductive polymer and process for making it	EP200513472A 6/22/2005	EP1615484B1 2/18/2015	Enthone Inc.
Europe Designated countries: DE ES FR GB NL	Method for the electrolytic deposition of copper	EP200518241A 8/23/2005	EP1630258B1 2/27/2013	Enthone Inc.
Europe	COPPER ELECTRODEPOSITION IN MICROELECTRONICS	EP2005851560A 11/14/2005	EP1810322A2 7/25/2007	Enthone Inc.
Europe	Process and apparatus for cleaning of processing solutions	EP200525726A 11/25/2005	EP1803837A1 7/4/2007	Enthone Inc.
Europe Designated countries: DE FR	ELECTROLYTE AND PROCESS FOR DEPOSITING A MATT METAL LAYER	EP2006701821A 1/6/2006	EP1969160B1 4/27/2011	Enthone Inc.
Europe	Process for depositing crack-free, corrosion resistant and hard chromium and chromium alloy layers	EP20064787A 3/9/2006	EP1798313A3 6/18/2008	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe Designated countries: DE FR	METHOD FOR ELECTRODEPOSITION OF BRONZES	EP2006750231A 4/14/2006	EP1874982B1 5/7/2014	Enthone Inc.
Europe	Process for the direct metallization of nonconductive substrates	EP200611977A 6/9/2006	EP1734156A1 12/20/2006	Enthone Inc.
Europe Designated countries: DE FR GB NL	Improved process for the direct metallisation of nonconductive substrates, particularly polyimide surfaces	EP200612849A 6/22/2006	EP1870491B1 5/27/2015	Enthone Inc.
Designated countries: DE FR GB NL	Electrolyte composition und process for the deposition of a zinc-nickel alloy layer on a cast iron or steel substrate	EP200614519A 7/13/2006	EP1881090B1 9/16/2015	Enthone Inc.
Europe Designated country: DE	TIN-SILVER SOLDER BUMPING IN ELECTRONICS MANUFACTURE	EP2006801412A 8/14/2006	EP1946362B1 1/11/2012	Enthone Inc.
Europe Designated countries: DE FR GB NL	COMPOSITION COMPRISING AN INDIUM-CONTAINING INTRINSICALLY CONDUCTIVE POLYMER	EP2006776958A 8/18/2006	EP1917666B1 2/15/2012	Enthone Inc.
Europe Designated countries: DE FR GB NL	Method for etching non-conductive substrate surfaces	EP200617605A 8/24/2006	EP1785507B1 10/14/2009	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe Designated countries: DE FR	Deposition of conductive polymer and metallization of non-conductive substrates	EP200618729A 9/7/2006	EP1897974B1 8/1/2012	Enthone Inc.
Europe Designated countries: DE FR	Deposition of conductive polymer and metallization of non-conductive substrates	EP200618730A 9/7/2006	EP1897975B1 3/14/2012	Enthone Inc.
Europe Designated countries: DE FR GB IT NL	Electrolyte composition and method for the deposition of quaternary copper alloys	EP200625184A 12/6/2006	EP1930478B1 6/19/2013	Enthone Inc.
Europe	METHOD AND DEVICE FOR COATING SUBSTRATE SURFACES	EP2007703047A 1/26/2007	EP1979511A2 10/15/2008	Enthone Inc.
Europe	Electrolyte and method for electrolytic deposition of gold-copper alloys	EP20077963A 4/19/2007	EP1983077A1 10/22/2008	Enthone Inc.
Europe Designated countries: DE FR GB NL	Chromium-free etchant for plastic surfaces	EP200715812A 8/10/2007	EP2025708B1 10/14/2009	Enthone Inc.
Europe Designated countries: DE FR GB NL	ARTICLE WITH A COATING OF ELECTRICALLY CONDUCTIVE POLYMER AND PRECIOUS/SEMIPRECIOUS METAL AND PROCESS FOR PRODUCTION THEREOF	EP2007801892A 8/24/2007	EP2062467B1 2/15/2012	Enthone Inc.

Country	**Title**	**App. No.** **App. Date**	**Patent No.** **Issue Date** **(Publication No.)**	**Owner**
Europe	CYANIDE FREE ELECTROLYTE COMPOSITION UND PROCESS FOR PLATING SILVER OR ALLOYS THEREOF ON SUBSTRATES	EP2007818853A 10/9/2007	EP2089561A2 8/19/2009	Enthone Inc.
Europe	METALLIC SURFACE ENHANCEMENT	EP2008746252A 4/18/2008	EP2142485A1 1/13/2010	Enthone Inc.
Europe	CORROSION PROTECTION OF BRONZES	EP2008771362A 6/18/2008	EP2173925A1 4/14/2010	Enthone Inc.
Europe	Electrolyte and method for the deposition of a matt metal layer	EP200812262A 7/8/2008	EP2143828A1 1/13/2010	Enthone Inc.
Europe	COPPER METALLIZATION OF THROUGH SILICON VIA	EP2008797141A 8/4/2008	EP2183769A1 5/12/2010	Enthone Inc.
Europe Designated countries: DE FR	Method for electroplating hard chrome layers	EP200818462A 10/22/2008	EP2180088B1 5/11/2011	Enthone Inc.
Europe	SELF ASSEMBLED MOLECULES ON IMMERSION SILVER COATINGS	EP2008846962A 11/10/2008	EP2222416A1 9/1/2010	Enthone Inc.
Europe	ANTI-TARNISH COATING	EP2008852669A 11/18/2008	EP2220009A1 8/25/2010	Enthone Inc.
Europe	ELECTROLYTIC DEPOSITION OF METAL-BASED COMPOSITE COATINGS COMPRISING NANO-PARTICLES	EP2008859746A 12/10/2008	EP2242873A1 10/27/2010	Enthone Inc.
Europe	COMPOSITE COATINGS FOR WHISKER REDUCTION	EP2008859755A 12/10/2008	EP2231903A1 9/29/2010	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Europe Designated countries: DE FR	Process for inhibiting tarnishing of silver coatings	EP200821571A 12/12/2008	EP2196563B1 4/3/2013	Enthone Inc.
Europe Designated countries: DE FR GB	ADHESION PROMOTION OF METAL TO LAMINATE WITH A MULTI-FUNCTIONAL COMPOUND	EP2009723171A 3/23/2009	EP2274460B1 10/10/2012	Enthone Inc.
Europe	Adhesion promotion of metal to laminate with a multi-functional compound	EP2012187699A 3/23/2009	EP2546387A1 1/16/2013	Enthone Inc.
Europe Designated countries: DE FR GB NL	CYANIDE FREE ELECTROLYTE COMPOSITION FOR THE GALVANIC DEPOSITION OF A COPPER LAYER	EP2009790463A 7/15/2009	EP2329062B1 5/29/2013	Enthone Inc.
Europe Designated countries: DE FR	Galvanic bath and method for deposition of zinc-containing layers	EP200914111A 11/11/2009	EP2184384B1 6/6/2012	Enthone Inc.
Europe	METHOD FOR THE POST-TREATMENT OF METAL LAYERS	EP2009760050A 11/13/2009	EP2366041A2 9/21/2011	Enthone Inc.
Europe	ELECTRODEPOSITION OF COPPER IN MICROELECTRONICS WITH DIPYRIDYL-BASED LEVELERS	EP2009760054A 11/19/2009	EP2358926A2 8/24/2011	Enthone Inc.

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Europe	BETA-AMINO ACID COMPRISING ELECTROLYTE AND METHOD FOR THE DEPOSITION OF A METAL LAYER	EP2010730685A 7/6/2010	EP2449148A2 5/9/2012	Enthone Inc.
Europe	IMMERSION TIN SILVER PLATING IN ELECTRONICS MANUFACTURE	EP2010773811A 10/28/2010	EP2494094A2 9/5/2012	Enthone Inc.
Europe	Compostion and method for the deposition of conductive polymers on dielectric substrates	EP2010189442A 10/29/2010	EP2447296A1 5/2/2012	Enthone Inc.
Europe	Aqueous solution and method for the formation of a passivation layer	EP2011155672A 2/23/2011	EP2492372A1 8/29/2012	Enthone Inc.
Europe	METHOD FOR DIRECT METALLIZATION OF NON-CONDUCTIVE SUBSTRATES	EP2011711230A 3/21/2011	EP2547807A1 1/23/2013	Enthone Inc.
Europe Designated countries: DE FR GB NL	CORROSION-PROTECTIVE WAX COMPOSITION CONTAINING POLYANILINE IN A DOPED FORM AND A LIQUID PARAFFIN	EP2011709650A 3/21/2011	EP2480612B1 3/6/2013	Enthone Inc.
Europe Designated countries: DE FR GB NL	Apparatus for electrochemical deposition of a metal	EP2011174683A 7/20/2011	EP2548998B1 7/1/2015	Enthone Inc.
Europe Designated countries: DE FR GB	Aqueous activator solution and process for electroless copper deposition on laser-direct structured substrates	EP2011184516A 10/10/2011	EP2581469B1 4/15/2015	Enthone Inc.

Country	**Title**	**App. No.** **App. Date**	**Patent No.** **Issue Date** **(Publication No.)**	**Owner**
Europe	COMPOSITION AND METHOD FOR THE DEPOSITION OF CONDUCTIVE POLYMERS ON DIELECTRIC SUBSTRATES	EP2011782715A 10/31/2011	EP2632969A2 9/4/2013	Enthone Inc.
Europe	PROCESS FOR FILLING VIAS IN THE MICROELECTRONICS	EP2012703929A 1/26/2012	EP2668317A1 12/4/2013	Enthone Inc.
Europe	Pre-etching composition and etching process for plastic substrates	EP2012165248A 4/24/2012	EP2657367B1 11/25/2015	Enthone Inc.
Europe	Aqueous stripping composition for the removal of polymeric surface sealants on metal surfaces	EP2013169155A 5/24/2013	EP2806002A1 11/26/2014	Enthone Inc.
Europe	Aqueous electrolyte composition having a reduced airborne emission	EP2013183142A 9/5/2013	EP2845928A1 3/11/2015	Enthone Inc.
Europe	ELECTRODEPOSITION OF SILVER WITH FLUOROPOLYMER NANOPARTICLES	EP2014721119A 3/14/2014	EP2971263A1 1/20/2016	Enthone Inc.
France	COMPOSITION DE BAIN DE CUIVRE POUR LE REMPLISSAGE AUTOCATALYTIQUE ET/OU ELECTROLYTIQUE DE TROUS D'INTERCONNEXION ET DE TRANCHEES POUR LA FABRICATION DE CIRCUITS INTEGRES	FR20041133A 2/5/2004	FR2850674A1 8/6/2004	Enthone Inc.
Germany	NACHBEHANDLUNG VON KUPFER AUF GEDRUCKTEN SCHALTUNGSPLATTEN	DE69906301A 7/1/1999	DE69906301T2 1/22/2004	Alpha Metals, Inc.
Germany	WEICHLOTFLUSSMITTEL	DE60022223A 12/1/2000	DE60022223T2 6/14/2006	Alpha Metals, Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Germany	VERFAHREN ZUR STROMLOSEN VERZINNUNG VON KUPFER ODER KUPFERLEGIERUNGEN	DE60044943A 11/9/2000	DE60044943D1 10/21/2010	Enthone Inc.
Germany	Verfahren zur elektrolytischen Abscheidung aus einer chromhaltigen Lösung	DE50015318A 11/11/2000	DE50015318D1 10/2/2008	Enthone Inc.
Germany	VERFAHREN FÜR DEN ERWEITERTEN GEBRAUCH VON ELEKTROLYTEN	DE60038700A 11/21/2000	DE60038700T2 5/20/2009	Enthone Inc.
Germany	Verwendung eines Verfahrens zur Herstellung leitender Polymere mit hoher Metallisierungsfähigkeit zur Durchmetallisierung von kaschierten Basismaterialien zur Leiterplattenherstellung	DE10220684A 5/10/2002	DE10220684B4 12/8/2011	Enthone Inc.
Germany	Verfahren und Elektrolyt zur Hochgeschwindigkeitsabscheidung von Zink-Mangan-Legierungen	DE10306823A 2/19/2003	DE10306823B4 7/8/2010	Enthone Inc.
Germany	Verfahren zur Regenerierung von Metallisierungsbädern	DE102004002778A 1/20/2004	DE102004002778B4 3/27/2008	Enthone Inc.
Germany	Verfahren zur Behandlung von laserstrukturierten Kunststoffoberflächen	DE102004017440A 4/8/2004	DE102004017440A1 11/3/2005	Enthone Inc.
Germany	Verfahren zur Metallisierung von Kunststoffoberflächen	DE102004026489A 5/27/2004	DE102004026489B3 9/29/2005	Enthone Inc.
Germany	Elektrolytzusammensetzung und Verfahren zur Abscheidung rissfreier, korrosionsbeständiger und harter Chrom- und Chromlegierungsschichten	DE102005059367A 12/13/2005	DE102005059367B4 4/3/2014	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Germany	Cyanidfreie Elektrolytzusammensetzung zur galvanischen Abscheidung einer Kupferschicht und Verfahren zur Abscheidung einer kupferhaltigen Schicht	DE102008033174A 7/15/2008	DE102008033174B3 9/17/2009	Enthone Inc.
Germany	Galvanisches Bad zur Abscheidung von zinkhaltigen Schichten	DE202008014947U 11/11/2008	DE202008014947U1 4/16/2009	Enthone Inc.
Germany	Verbessertes Verfahren zur Direktmetallisierung von nicht leitenden Substraten	DE102010012204A 3/19/2010	DE102010012204A1 9/22/2011	Enthone Inc.
PCT	FLUX FORMULATIONS	WO2013US69672A 11/12/2013	WO2015072974A1 5/21/2015	Alpha Metals, Inc.
PCT	JOINING TO ALUMINIUM	WO2014GB52623A 8/29/2014	WO2015028813A1 3/5/2015	Alpha Metals, Inc.
PCT	COMPOSITE AND MULTILAYERED SILVER FILMS FOR JOINING ELECTRICAL AND MECHANICAL COMPONENTS	WO2014US53489A 8/29/2014	WO2015031801A3 11/19/2015	Alpha Metals, Inc.
PCT	LEAD-FREE, SILVER-FREE SOLDER ALLOYS	WO2014US62866A 10/29/2014	WO2015066155A1 5/7/2015	Alpha Metals, Inc.
PCT	ROSIN-FREE THERMOSETTING FLUX FORMULATIONS	WO2014US72936A 12/31/2014	WO2015103362A1 7/9/2015	Alpha Metals, Inc.
PCT	LOW PRESSURE SINTERING POWDER	WO2015GB51096A 4/10/2015	WO2015155542A1 10/15/2015	Alpha Metals, Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
PCT	METHOD FOR MANUFACTURING METAL POWDER	WO2015GB51099A 4/10/2015	WO2015162405A1 10/29/2015	Alpha Metals, Inc.
PCT	JETTABLE INKS FOR SOLAR CELL AND SEMICONDUCTOR FABRICATION	WO2015US31614A 5/19/2015	WO2015179425A2 11/26/2015	Alpha Metals, Inc.
PCT	SINTERING MATERIALS AND ATTACHMENT METHODS USING SAME	WO2015US35566A 6/12/2015	WO2015192004A1 12/17/2015	Alpha Metals, Inc.
PCT	ENGINEERED RESIDUE SOLDER PASTE TECHNOLOGY	WO2015GB51797A 6/19/2015	WO2015193684A1 12/23/2015	Alpha Metals, Inc.
PCT	MULTILAYERED METAL NANO AND MICRON PARTICLES	WO2015GB51805A 6/22/2015	WO2015198022A1 12/30/2015	Alpha Metals, Inc.
PCT	STRETCHABLE INTERCONNECTS FOR FLEXIBLE ELECTRONIC SURFACES	WO2015GB52024A 7/14/2015	WO2016012753A1 1/28/2016	Alpha Metals, Inc.
PCT	LOW TEMPERATURE HIGH RELIABILITY ALLOY FOR SOLDER HIERARCHY	WO2015GB52036A 7/15/2015	WO2016012754A2 1/28/2016	Alpha Metals, Inc.
PCT	ADHESION PROMOTION IN PRINTED CIRCUIT BOARDS	WO2013US55368A 8/16/2013	WO2015023295A1 2/19/2015	Enthone Inc.
PCT	AQUEOUS ELECTROLYTE COMPOSITION HAVING A REDUCED AIRBORNE EMISSION, METHOD AND USE OF THIS COMPOSITION	WO2014US54368A 9/5/2014	WO2015035219A1 3/12/2015	Enthone Inc.
PCT	ELECTRODEPOSITION OF COPPER	WO2014US67403A 11/25/2014	WO2015077772A1 5/28/2015	Enthone Inc.

Country	Title	App. No. App. Date	Patent No. Issue Date (Publication No.)	Owner
Singapore	PROCESS FOR SELECTIVE DEPOSITION OF COPPER SUBSTRATES	SG2002010122 8/21/2000	87309 1/27/2006	Enthone Inc.