

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3317837

|                                                                                                                                                                                                 |                                |                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|
| <b>SUBMISSION TYPE:</b>                                                                                                                                                                         | NEW ASSIGNMENT                 |                       |
| <b>NATURE OF CONVEYANCE:</b>                                                                                                                                                                    | ASSIGNMENT                     |                       |
| <b>CONVEYING PARTY DATA</b>                                                                                                                                                                     |                                |                       |
|                                                                                                                                                                                                 | <b>Name</b>                    | <b>Execution Date</b> |
|                                                                                                                                                                                                 | MSA AUER GMBH                  | 01/04/2015            |
| <b>RECEIVING PARTY DATA</b>                                                                                                                                                                     |                                |                       |
| <b>Name:</b>                                                                                                                                                                                    | MSA EUROPE GMBH                |                       |
| <b>Street Address:</b>                                                                                                                                                                          | ALTE JONASTRASSE 24            |                       |
| <b>City:</b>                                                                                                                                                                                    | RAPPERSWIL                     |                       |
| <b>State/Country:</b>                                                                                                                                                                           | SWITZERLAND                    |                       |
| <b>Postal Code:</b>                                                                                                                                                                             | 8640                           |                       |
| <b>PROPERTY NUMBERS Total: 1</b>                                                                                                                                                                |                                |                       |
|                                                                                                                                                                                                 | <b>Property Type</b>           | <b>Number</b>         |
|                                                                                                                                                                                                 | Application Number:            | 13878110              |
| <b>CORRESPONDENCE DATA</b>                                                                                                                                                                      |                                |                       |
| <b>Fax Number:</b>                                                                                                                                                                              | (412)741-9292                  |                       |
| <i>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.</i> |                                |                       |
| <b>Phone:</b>                                                                                                                                                                                   | 412-741-8400                   |                       |
| <b>Email:</b>                                                                                                                                                                                   | uspto@ferencelaw.com           |                       |
| <b>Correspondent Name:</b>                                                                                                                                                                      | FERENCE & ASSOCIATES           |                       |
| <b>Address Line 1:</b>                                                                                                                                                                          | 409 BROAD STREET               |                       |
| <b>Address Line 2:</b>                                                                                                                                                                          | SUITE 260                      |                       |
| <b>Address Line 4:</b>                                                                                                                                                                          | PITTSBURGH, PENNSYLVANIA 15143 |                       |
| <b>ATTORNEY DOCKET NUMBER:</b>                                                                                                                                                                  | 768.003_US                     |                       |
| <b>NAME OF SUBMITTER:</b>                                                                                                                                                                       | JENNIFER L. LINEBERRY          |                       |
| <b>SIGNATURE:</b>                                                                                                                                                                               | /Jennifer L. Lineberry/        |                       |
| <b>DATE SIGNED:</b>                                                                                                                                                                             | 04/20/2015                     |                       |
| <b>Total Attachments: 25</b>                                                                                                                                                                    |                                |                       |
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## INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT

This Intellectual Property Assignment Agreement (the "Assignment"), effective as of January 4, 2015, is by and between MSA Auer GmbH (in the future: MSA Deutschland GmbH), a German company with its principal place of business located at Thiemannstraße 1, 12059 Berlin, Deutschland ("Assignor"), MSA Europe GmbH, a Swiss company, with its principal place of business located at MSA Europe GmbH, Alte Jonastrasse 24, 8640 Rapperswil, Switzerland ("Assignee"), and MSA Produktion Deutschland GmbH, a German company with its principal place of business located at Thiemannstraße 1, 12059 Berlin, Deutschland ("MSA Produktion").

WHEREAS, Assignor is the owner of certain intellectual property listed on the attached Schedules A and B;

WHEREAS, Assignor has sold to Assignee the Assigned IP (as defined below) and Assignee has purchased from Assignor the Assigned IP (as defined below) under that certain *Asset Kauf- und Übertragungsvertrag / Asset Purchase and Transfer Agreement* between the Parties dated as of December 17, 2014 (the "APA");

WHEREAS, in fulfillment of the APA, Assignor desires to assign, and Assignee desires to acquire all worldwide right, title, and interest in and to the Assigned IP (as defined below), including any and all goodwill of the business associated with the use of, and symbolized by the trademarks, and Assignor and Assignee wish to record such acquisition in the respective Patent and Trademark Offices and/or relevant official offices, registrars, and registries around the world.

NOW, THEREFORE, in fulfillment of the APA and in consideration of the purchase price set forth in the APA for the Assigned IP Assignor and Assignee agree as follows:

1. Assignment of Trademarks. Assignor hereby transfers, conveys, assigns and delivers to Assignee and Assignee accepts all right, title, and interest of Assignor in and to (i) the trademarks and trademark applications set forth in Schedule A hereto as well as any unregistered trademarks currently owned by Assignor, together with the goodwill of the business symbolized thereby; (ii) all renewals and extensions of any such application, registration and filing; (iii) all licenses for the use of the trademarks; (iv) all income, royalties, damages, claims, and payments now or hereafter due or payable under and with respect thereto, including, without limitation, damages, claims, and payments for past and future infringements thereof; (v) all rights to sue for past, present, and future infringements of the foregoing, including the right to settle suits involving claims and demands for royalties owing; (vi) all rights corresponding to any of the foregoing throughout the world; and (vii) the right to assign the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit, and for the benefit of its successors, assigns, and legal representatives (the "Assigned Trademarks").
2. Assignment of Patents. Assignor hereby transfers, conveys, assigns and delivers to Assignee and Assignee accepts all right, title, and interest of Assignor in and to (i) the patents, patent applications and design patents (including registered designs) set forth in

Schedule B hereto as well as any inventions and disclosures previously created by employees or officers (*Organmitglieder*) of Assignor and acquired by Assignor but not yet filed (ii) all inventions and improvements described and claimed therein, and patents which may be granted from divisions, reissues, substitutions, continuations, continuations-in-part, reexaminations, foreign counterparts and extensions thereof claiming priority to the underlying said patent rights, and the right to claim priority from any of the foregoing; (iii) all licenses for the use of the patents; (iv) all income, royalties, damages, claims, and payments now or hereafter due or payable under and with respect thereto, including, without limitation, damages, claims, and payments for past and future infringements thereof; (v) all rights to sue for past, present, and future infringements of the foregoing, including the right to settle suits involving claims and demands for royalties owing; (vi) all rights corresponding to any of the foregoing throughout the world; and (vii) the right to assign the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit, and for the benefit of its successors, assigns, and legal representatives (the "Assigned Patents").

3. Assignment of Copyrights and Rights of Use and Exploitation Therein. Assignor hereby transfers, conveys, assigns and delivers to Assignee and Assignee accepts all right, title, and interest of Assignor in and to (i) any and all copyrights and copyright registrations as well as any unregistered copyrights, ancillary rights and sui-generis rights – e.g. database rights – existing under applicable copyright laws, which are currently owned, controlled or having the right to be used by Assignor, (ii) including all extensions or renewals thereof, in each case whether published or unpublished, (iii) all licenses and rights of use and/or exploitation for the use of any of the foregoing, including rights to computer programs according to sec. 69b German Copyright Act (*vermögensrechtliche Befugnisse*); (iv) all income, royalties, damages, claims, and payments now or hereafter due or payable under and with respect thereto, including, without limitation, damages, claims, and payments for past and future infringements thereof; (v) all rights to sue for past, present, and future infringements of the foregoing, including the right to settle suits involving claims and demands for royalties owing; (vi) all rights corresponding to any of the foregoing throughout the world; and (vii) the right to assign the rights conveyed herein, the same to be held and enjoyed by Assignee for its own use and benefit, and for the benefit of its successors, assigns, and legal representatives (the "Assigned Copyrights"). The assigned Copyrights comprise, without limitation, the rights set forth in Schedule C.
4. Know-How. Assignor hereby transfers, conveys, assigns and delivers to Assignee and Assignee accepts all right, title, and interest of Assignor in and to all trade secrets, techniques, processes, standard calculations, business information, software in source code and object code, and including all documentation, databases, prototypes and other information owned, controlled or having the right to be used and assigned by Assignor, and which is necessary or useful to design or to develop or to manufacture or have manufactured products and all physical and tangible materials in any media embodying or incorporating predominantly any of the same (the "Assigned Know-How"). For the avoidance of doubt, any information which Assignor is not entitled to disclose and/or transfer, convey assign or deliver to third parties, e.g. due to confidentiality restrictions to third parties, do not qualify as Assigned Know-how, and all physical and tangible

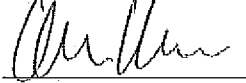
materials in any media embodying or incorporating any of the above-mentioned information together with other information (and in particular Assignor's IT infrastructure, such as servers, workstations and data carriers) do not qualify as Assigned Know-How. The assigned Know-How comprises, without limitation, all information and physical and tangible material set forth in Schedule D. Section 1.3 of the APA is hereby amended insofar, and the Parties are in agreement that the above definition of "Assigned Know-How" shall also apply to the sale of assets to Assignee as stipulated in the APA.

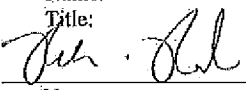
5. Transfer of Assigned Know-How. Transfer of the information, and/or physical and tangible materials containing Assigned Know-How from Assignor to Assignee shall take place as set forth in the APA with respect to the material set forth under no. 2 of Schedule D. Assignor and Assignee will agree on another mode of action regarding a transfer of the information and/or the other physical and tangible material comprised in the Assigned Know-How, in particular the material stored in electronic form in the IT systems of the Assignor at the Closing Date in its premises (i.e. at Thiemannstrasse 1, 12059 Berlin, Deutschland). Assignor and Assignee may in particular, without limitation, consider (i) to copy such data and to hand over a copy, (ii) to grant access to the Assignor's respective IT environment, (iii) and/or to communicate the information comprised in the Assigned Know-How on a case-by-case basis in another way. Section 1.4, sentences 4 through 6 of the APA are hereby amended insofar, sentence 5 is deleted.
6. Co-Ownership Rights and Contingent Right to Title. To the extent Assignor currently holds a co-ownership right or a contingent right to title (such as an *Anwartschaftsrecht* under German law) in any of the Assigned IP, the sale, transfer and assignment under this Assignment includes such co-ownership rights and contingent right to title.
7. Further Assurances. Assignor shall promptly do, make, execute, or deliver, or cause to be done, made, executed, or delivered, all such further acts, documents, and things as are necessary to transfer ownership of the Assigned Patents, Assigned Trademarks, Assigned Copyrights and Assigned Know-How (collectively called the "Assigned IP") to Assignee and to properly document the same, and for Assignee to record or register the Assigned IP with the relevant official office or registry.
8. Liabilities; Indemnification. Assignee is not assuming any of the liabilities or obligations relating to the Assigned IP that are based in whole or in part on any facts or circumstances that existed on or prior to the effective date of this Agreement. Assignor shall indemnify, defend and hold harmless Assignee and all of Assignee's members, managers, officers and employees against any and all losses relating to, arising out of or incurred in connection with the Assigned IP on or prior to the effective date of this Assignment or any claim that any of the Assigned IP infringes on any intellectual property or other rights of any other person.
9. Consent of MSA Produktion. MSA Produktion agrees to the provisions herein, in particular to the amendment of the definition of "Assigned Know-How".
10. Successors. This Assignment shall inure to the benefit of and is binding upon the respective successors and assigns of Assignor and Assignee.

11. Governing Law. This Assignment shall be governed by, and construed in accordance with the laws of Germany, without giving effect to the conflict of laws rules thereof, save where mandatory trademark, patent, copyright or other mandatory substantive laws of another country applies to individual issues regardless of the Parties' choice of law.
12. Counterparts. This Assignment may be executed in separate counterparts, each of which is deemed to be an original and all of which taken together constitute one and the same agreement.

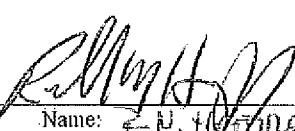
IN WITNESS WHEREOF, Assignor, Assignee and MSA Produktion caused this Agreement to be duly executed,

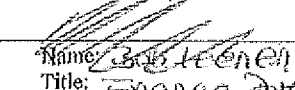
ASSIGNOR: MSA AUER GmbH

By:   
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

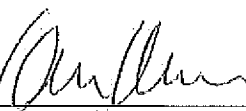
By:   
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

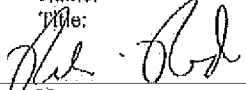
ASSIGNEE: MSA EUROPE GmbH

By:   
Name: E. N. Hering Jr.  
Title: President Europe

By:   
Name: B. Steiner  
Title: Finance Director Europe

MSA PRODUKTION: MSA PRODUKTION DEUTSCHLAND GMBH

By:   
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

By:   
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

## **Schedule A - Registered Trademarks**

*See attached*

# Trademarks Portfolio - MSA Auer

Dec 2, 2014

| FIG ID  | TITLE             | STATUS     | FILING BASIS | COUNTRY | CATEGORY/TYPE   | APPLICATION NUMBER | APPLICATION DATE | REGISTRATION NUMBER | REGISTRATION DATE | REGISTRANT    |
|---------|-------------------|------------|--------------|---------|-----------------|--------------------|------------------|---------------------|-------------------|---------------|
| 1053337 | AUER              | Registered | Use          | AT      | ORG (Trademark) | 592                | 9/21/25          | 592                 | 9/21/45           | MSA Auer GmbH |
| 1053343 | AUER <fig.>       | Registered | Use          | AT      | ORG (Trademark) | 15612              | 8/2/49           | 15612               | 10/20/49          | MSA Auer GmbH |
| 1043136 | SAVOX             | Registered | Use          | AU      | ORG (Trademark) | 867676             | 2/28/01          | 867676              | 2/28/01           | MSA Auer GmbH |
| 1053306 | AirFlo Lite       | Registered | Use          | DE      | ORG (Trademark) | 30009142709        | 2/5/00           | 30009142            | 4/13/00           | MSA Auer GmbH |
| 1053307 | AirGo             | Registered | Use          | DE      | ORG (Trademark) | 30705090409        | 1/23/07          | 30705090            | 4/20/07           | MSA Auer GmbH |
| 1053311 | AirMaXX           | Registered | Use          | DE      | ORG (Trademark) | 30094364409        | 12/23/00         | 30094364            | 12/10/01          | MSA Auer GmbH |
| 1053317 | alphaBASE         | Registered | Use          | DE      | ORG (Trademark) | 30605889809        | 1/23/06          | 30605889            | 3/10/06           | MSA Auer GmbH |
| 1053325 | alphaCLICK        | Registered | Use          | DE      | ORG (Trademark) | 30577377109        | 12/24/05         | 30577377            | 2/9/06            | MSA Auer GmbH |
| 1053327 | alphaSCOUT        | Registered | Use          | DE      | ORG (Trademark) | 30605890109        | 1/23/06          | 30605890            | 3/10/06           | MSA Auer GmbH |
| 1053333 | alphaSL           | Registered | Use          | DE      | ORG (Trademark) | 30577376309        | 12/24/05         | 30577376            | 2/9/06            | MSA Auer GmbH |
| 1053338 | A AUER and Design | Registered | Use          | DE      | ORG (Trademark) | A20036             | 2/14/69          | 886207              | 10/7/71           | MSA Auer GmbH |
| 1053347 | A AUER and Design | Registered | Use          | DE      | ORG (Trademark) | A28731             | 12/29/38         | 514358              | 7/28/39           | MSA Auer GmbH |
| 1054063 | AUER 3 S          | Registered | Use          | DE      | ORG (Trademark) | A41922             | 8/28/86          | 1099538             | 11/25/86          | MSA Auer GmbH |
| 1054070 | AUER air-elite    | Registered | Use          | DE      | ORG (Trademark) | A57293             | 7/11/94          | 2078577             | 9/21/94           | MSA Auer GmbH |
| 1054097 | AUER S-CAP        | Registered | Use          | DE      | ORG (Trademark) | A34043             | 12/4/80          | 1014360             | 2/18/81           | MSA Auer GmbH |
| 1054098 | Auer-Ex-METER     | Registered | Use          | DE      | ORG (Trademark) | A10904             | 5/9/61           | 762875              | 6/29/62           | MSA Auer GmbH |
| 1054167 | AUERGESELLSCHAFT  | Registered | Use          | DE      | ORG (Trademark) | 39636097101        | 8/7/96           | 39636097            | 1/20/97           | MSA Auer GmbH |
| 1054176 | AUER-TOXIMETER    | Registered | Use          | DE      | ORG (Trademark) | A15468             | 4/6/65           | 818992              | 5/2/66            | MSA Auer GmbH |
| 1054179 | AutoMaXX          | Registered | Use          | DE      | ORG (Trademark) | 30094365209        | 12/23/00         | 30094365            | 12/11/01          | MSA Auer GmbH |
| 1054180 | BD 96             | Registered | Use          | DE      | ORG (Trademark) | 39651859109        | 11/25/96         | 39651859            | 4/11/97           | MSA Auer GmbH |
| 1054181 | Champion Elite    | Registered | Use          | DE      | ORG (Trademark) | 39651854009        | 11/25/96         | 39651854            | 4/2/97            | MSA Auer GmbH |
| 1054182 | Champion Super    | Registered | Use          | DE      | ORG (Trademark) | 39651851609        | 11/25/96         | 39651851            | 4/2/97            | MSA Auer GmbH |
| 1060025 | CO-TRANS          | Registered | Use          | DE      | ORG (Trademark) | A34044             | 12/4/80          | 1014361             | 2/18/81           | MSA Auer GmbH |
| 1060028 | DuoFit            | Registered | Use          | DE      | ORG (Trademark) | 30072415217        | 9/22/00          | 30072415            | 4/26/01           | MSA Auer GmbH |
| 1060029 | Echem             | Registered | Use          | DE      | ORG (Trademark) | A5797109Wz         | 10/15/94         | 2086098             | 11/28/94          | MSA Auer GmbH |
| 1060039 | EXPLOSIARM        | Registered | Use          | DE      | ORG (Trademark) | A17859             | 4/11/67          | 845197              | 5/13/68           | MSA Auer GmbH |
| 1060040 | EX-TOX-ALARM 2000 | Registered | Use          | DE      | ORG (Trademark) | 39651858309        | 11/25/96         | 39651858            | 7/23/97           | MSA Auer GmbH |
| 1060041 | EX-TOX-ALARM 290  | Registered | Use          | DE      | ORG (Trademark) | 39651855909        | 11/25/96         | 39651855            | 4/11/97           | MSA Auer GmbH |
| 1060042 | EX-TRANS          | Registered | Use          | DE      | ORG (Trademark) | A34045             | 12/4/80          | 1014362             | 2/18/81           | MSA Auer GmbH |
| 1060047 | FormFit           | Registered | Use          | DE      | ORG (Trademark) | 30039147809        | 2/5/00           | 30009147            | 5/18/00           | MSA Auer GmbH |
| 1060049 | GASISTOR          | Registered | Use          | DE      | ORG (Trademark) | A28017             | 5/19/76          | 957829              | 5/10/77           | MSA Auer GmbH |
| 1060050 | HALTEFIX          | Registered | Use          | DE      | ORG (Trademark) | 39728093909        | 6/13/97          | 39728093            | 12/9/97           | MSA Auer GmbH |
| 1060051 | ICU               | Registered | Use          | DE      | ORG (Trademark) | 39762135309        | 12/20/97         | 39762135            | 4/15/98           | MSA Auer GmbH |
| 1060055 | Lite Hood         | Registered | Use          | DE      | ORG (Trademark) | 30009144309        | 2/5/00           | 30009144            | 4/13/00           | MSA Auer GmbH |
| 1060064 | motionscout       | Registered | Use          | DE      | ORG (Trademark) | 30661986509        | 10/6/06          | 30661986            | 12/22/06          | MSA Auer GmbH |
| 1060080 | OXY-TRANS         | Registered | Use          | DE      | ORG (Trademark) | A335949Wz          | 7/23/80          | 1008579             | 9/30/80           | MSA Auer GmbH |
| 1060092 | PERSPECTA         | Registered | Use          | DE      | ORG (Trademark) | A12151             | 5/25/62          | 773408              | 5/13/63           | MSA Auer GmbH |
| 1060109 | SAVOX (Stylized)  | Registered | Use          | DE      | ORG (Trademark) | 30019504409        | 3/14/00          | 30019504            | 6/26/00           | MSA Auer GmbH |

# Trademarks Portfolio - MSA Auer

Dec 2, 2014

| FP ID   | TITLE                               | STATUS     | FILING BASIS | COUNTRY | CATEGORY/TYPE   | APPLICATION NUMBER | APPLICATION DATE | REGISTRATION NUMBER | REGISTRATION DATE | REGISTRANT    |
|---------|-------------------------------------|------------|--------------|---------|-----------------|--------------------|------------------|---------------------|-------------------|---------------|
| 1060115 | SOUNDCONTROL and Design             | Registered | Use          | DE      | ORG (Trademark) | 39960644017        | 9/23/99          | 39960644            | 12/3/99           | MSA Auer GmbH |
| 1060119 | SUPREMA                             | Registered | Use          | DE      | ORG (Trademark) | 39956578709        | 9/8/99           | 39956578            | 3/23/00           | MSA Auer GmbH |
| 1060143 | TMP TRANSFER METALLISIERTE PRODUKTE | Registered | Use          | DE      | ORG (Trademark) | T30507716Wz        | 6/12/90          | 1165669             | 10/12/90          | MSA Auer GmbH |
| 1060146 | TOX-METER PID                       | Registered | Use          | DE      | ORG (Trademark) | 39651857509        | 11/25/96         | 39651857            | 4/11/97           | MSA Auer GmbH |
| 1060148 | Trilix                              | Registered | Use          | DE      | ORG (Trademark) | A26029             | 5/28/74          | 930737              | 5/2/75            | MSA Auer GmbH |
| 1060149 | Ultra Elite                         | Registered | Use          | DE      | ORG (Trademark) | 39651850809        | 11/25/96         | 39651850            | 5/6/98            | MSA Auer GmbH |
| 1060151 | UNIPACK                             | Registered | Use          | DE      | ORG (Trademark) | 30019505209        | 3/14/00          | 30019505            | 6/8/00            | MSA Auer GmbH |
| 1060158 | UNISCAPE                            | Registered | Use          | DE      | ORG (Trademark) | 30019503609        | 3/14/00          | 30019503            | 6/8/00            | MSA Auer GmbH |
| 1060161 | Vautex Elite                        | Registered | Use          | DE      | ORG (Trademark) | 39651853209        | 11/25/96         | 39651853            | 4/2/97            | MSA Auer GmbH |
| 1060162 | Vautex SL                           | Registered | Use          | DE      | ORG (Trademark) | 39651852409        | 11/25/96         | 39651852            | 4/2/97            | MSA Auer GmbH |
| 1418063 | TECBOS                              | Registered | Use          | DE      | ORG (Trademark) | 303100656          | 2/25/03          | 30310065            | 4/4/03            | MSA Auer GmbH |
| 1053310 | AirMaXX                             | Registered | Use          | EM      | ORG (Trademark) | 2519635            | 12/28/01         | 2519635             | 2/26/03           | MSA Auer GmbH |
| 1053313 | AirMaXX eXtreme                     | Registered | Use          | EM      | ORG (Trademark) | 3807732            | 4/29/04          | 3807732             | 7/25/05           | MSA Auer GmbH |
| 1054177 | AutoMaXX                            | Registered | Use          | EM      | ORG (Trademark) | 2520930            | 1/2/02           | 2520930             | 2/26/03           | MSA Auer GmbH |
| 1060046 | Flexl                               | Registered | Use          | EM      | ORG (Trademark) | 2522019            | 1/2/02           | 2522019             | 4/15/03           | MSA Auer GmbH |
| 1060059 | MicroMaXX                           | Pending    | Use          | EM      | ORG (Trademark) | 3278851            | 7/21/03          | 3278851             |                   | MSA Auer GmbH |
| 1060060 | mini SCAPE                          | Registered | Use          | EM      | ORG (Trademark) | 2538908            | 1/17/02          | 2538908             | 2/26/03           | MSA Auer GmbH |
| 1060069 | MPS                                 | Registered | Use          | EM      | ORG (Trademark) | 2524494            | 1/4/02           | 2524494             | 5/26/03           | MSA Auer GmbH |
| 1060070 | MSA AUER                            | Registered | Use          | EM      | ORG (Trademark) | 3798113            | 4/27/04          | 3798113             | 10/3/05           | MSA Auer GmbH |
| 1060072 | MSA EUROPE                          | Registered | Use          | EM      | ORG (Trademark) | 3798097            | 4/27/04          | 3798097             | 8/29/05           | MSA Auer GmbH |
| 1060074 | MSA GALLET                          | Registered | Use          | EM      | ORG (Trademark) | 3798361            | 4/27/04          | 3798361             | 8/29/05           | MSA Auer GmbH |
| 1060075 | MSA SORDIN                          | Registered | Use          | EM      | ORG (Trademark) | 4211405            | 12/21/04         | 4211405             | 1/26/06           | MSA Auer GmbH |
| 1060076 | OptimAir                            | Registered | Use          | EM      | ORG (Trademark) | 3278785            | 7/21/03          | 3278785             | 1/14/05           | MSA Auer GmbH |
| 1060093 | PlexTec                             | Registered | Use          | EM      | ORG (Trademark) | 7017593            | 6/26/08          | 7017593             | 6/11/09           | MSA Auer GmbH |
| 1060101 | SAVOX                               | Registered | Use          | EM      | ORG (Trademark) | 2107589            | 2/27/01          | 2107589             | 9/24/03           | MSA Auer GmbH |
| 1060111 | S-CAP <fig.>                        | Registered | Use          | EM      | ORG (Trademark) | 4233896            | 1/12/05          | 4233896             | 9/4/08            | MSA Auer GmbH |
| 1060134 | TabTec                              | Registered | Use          | EM      | ORG (Trademark) | 2189330            | 4/24/01          | 2189330             | 5/13/02           | MSA Auer GmbH |
| 1060150 | UNIPACK                             | Registered | Use          | EM      | ORG (Trademark) | 2520898            | 1/2/02           | 2520898             | 2/26/03           | MSA Auer GmbH |
| 1060157 | UNISCAPE                            | Registered | Use          | EM      | ORG (Trademark) | 2520906            | 1/2/02           | 2520906             | 2/26/03           | MSA Auer GmbH |
| 1120027 | DUOFIT                              | Registered | Use          | EM      | ORG (Trademark) | 1858976            | 9/19/00          | 1858976             | 9/20/02           | MSA Auer GmbH |
| 1060126 | SUPREMA                             | Registered | Use          | ES      | ORG (Trademark) | M25245872          | 2/6/03           | M2524587            | 12/16/03          | MSA Auer GmbH |
| 1060121 | SUPREMA                             | Registered | Use          | GB      | ORG (Trademark) | 2280216            | 9/10/01          | 2280216             | 5/24/02           | MSA Auer GmbH |
| 1266859 | A-U-E-R S-CAP                       | Registered | Use          | GB      | ORG (Trademark) | 1159542            | 8/14/81          | 1159542             | 8/14/81           | MSA Auer GmbH |
| 1053309 | AirGo                               | Registered | Use          | IB      | ORG (Trademark) | 933842             | 5/11/07          | 933842              | 5/11/07           | MSA Auer GmbH |
| 1053324 | alphaBASE                           | Registered | Use          | IB      | ORG (Trademark) | 893802             | 6/21/06          | 893802              | 6/21/06           | MSA Auer GmbH |
| 1053326 | alphaCLICK                          | Registered | Use          | IB      | ORG (Trademark) | 908867             | 6/21/06          | 908867              | 6/21/06           | MSA Auer GmbH |
| 1053332 | alphaSCOUT                          | Registered | Use          | IB      | ORG (Trademark) | 893804             | 6/21/06          | 893804              | 6/21/06           | MSA Auer GmbH |
| 1053335 | alphaSL                             | Registered | Use          | IB      | ORG (Trademark) | 908217             | 6/21/06          | 908217              | 6/21/06           | MSA Auer GmbH |

| Trademarks Portfolio - MSA Auer |                     |            |              |         |                 |                    |                  |                     |                   |               |
|---------------------------------|---------------------|------------|--------------|---------|-----------------|--------------------|------------------|---------------------|-------------------|---------------|
|                                 |                     |            |              |         |                 |                    |                  |                     |                   | Dec 2, 2014   |
| HP ID                           | TITLE               | STATUS     | FILING BASIS | COUNTRY | CATEGORY/TYPE   | APPLICATION NUMBER | APPLICATION DATE | REGISTRATION NUMBER | REGISTRATION DATE | REGISTRANT    |
| 1053342                         | AUER & Design       | Registered | Use          | IB      | ORG (Trademark) | 388260             | 4/21/72          | 388260              | 4/21/72           | MSA Auer GmbH |
| 1053354                         | A AUER and Design   | Registered | Use          | IB      | ORG (Trademark) | 232911             | 6/24/60          | 232911              | 6/24/60           | MSA Auer GmbH |
| 1054067                         | AUER 3 S            | Registered | Use          | IB      | ORG (Trademark) | 509996             | 12/9/86          | 509996              | 12/9/86           | MSA Auer GmbH |
| 1054094                         | AUER alr-eBte       | Registered | Use          | IB      | ORG (Trademark) | 670006             | 3/26/97          | 670006              | 3/26/97           | MSA Auer GmbH |
| 1060021                         | AUER S-CAP          | Registered | Use          | IB      | ORG (Trademark) | 461450             | 5/19/81          | 461450              | 5/19/81           | MSA Auer GmbH |
| 1060026                         | CO-TRANS            | Registered | Use          | IB      | ORG (Trademark) | 461451             | 5/19/81          | 461451              | 5/19/81           | MSA Auer GmbH |
| 1060038                         | EX-PEM              | Registered | Use          | IB      | ORG (Trademark) | 519260             | 12/17/87         | 519260              | 12/17/87          | MSA Auer GmbH |
| 1060044                         | EX-TRANS            | Registered | Use          | IB      | ORG (Trademark) | 461452             | 5/19/81          | 461452              | 5/19/81           | MSA Auer GmbH |
| 1060054                         | ICU                 | Registered | Use          | IB      | ORG (Trademark) | 732321             | 3/17/00          | 732321              | 3/17/00           | MSA Auer GmbH |
| 1060067                         | motionscout         | Registered | Use          | IB      | ORG (Trademark) | 934159             | 4/2/07           | 934159              | 4/2/07            | MSA Auer GmbH |
| 1060085                         | OXY-TRANS           | Registered | Use          | IB      | ORG (Trademark) | 462447             | 5/19/81          | 462447              | 5/19/81           | MSA Auer GmbH |
| 1060117                         | SOUNDCONTROL <fig.> | Registered | Use          | IB      | ORG (Trademark) | 739346             | 2/24/00          | 739346              | 2/24/00           | MSA Auer GmbH |
| 1060124                         | SUPREMA             | Registered | Use          | IB      | ORG (Trademark) | 733335             | 3/23/00          | 733335              | 3/23/00           | MSA Auer GmbH |
| 1060147                         | TOX-PEM             | Registered | Use          | IB      | ORG (Trademark) | 519261             | 12/17/87         | 519261              | 12/17/87          | MSA Auer GmbH |

**Schedule B – Patents**

*See attached*

## Active Patents - MSA Auer

Dec 2, 2014

| FIP ID  | TITLE                                                                                                                                                | STATUS  | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO. | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                                                   |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|---------|-----------------|------------------|------------|------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| 899941  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                      | Issued  | Utility - EPPAT | AT      | 047124706       | 2/19/04          | 1606023    | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                                                             |
| 900036  | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                                | Issued  | Utility - NSPCT | AU      | 2001262033      | 4/6/01           | 2001262033 | 6/3/04     | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 900037  | Bottle Support For Compressed-Air Bottles                                                                                                            | Issued  | Utility - NSPCT | AU      | 6203401         | 4/6/01           | 770367     | 6/3/04     | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                                                                              |
| 900038  | Support Frame For A Respiratory Air Container                                                                                                        | Issued  | Utility - NSPCT | AU      | 2001262035      | 4/6/01           | 2001262035 | 8/6/04     | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 900044  | Strap For A Full Respirator Mask                                                                                                                     | Issued  | Utility - NSPCT | AU      | 2002218131      | 10/10/01         | 2002218131 | 1/13/05    | MSA Auer GmbH | John F Kuhn, Wilfried Hoffmann                                                                                                |
| 900047  | Automatic-Lung Regulator For Compressed-Air Respiration Apparatus                                                                                    | Issued  | Utility - NSPCT | AU      | 2002250818      | 3/12/02          | 2002250818 | 6/9/05     | MSA Auer GmbH | Carsten Leuschner, Jan Martin, Werner Meis                                                                                    |
| 900050  | Strap Buckle For A Fastening Strap                                                                                                                   | Issued  | Utility - NSPCT | AU      | 2002315649      | 4/12/02          | 2002315649 | 8/17/06    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                                                                                    |
| 900059  | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                 | Issued  | Utility - NSPCT | AU      | 2002367303      | 12/21/02         | 2002367303 | 2/8/07     | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 900063  | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                                                          | Issued  | Utility - NSPCT | AU      | 2003223904      | 3/27/03          | 2003223904 | 3/20/08    | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 900074  | Filter Blower For Gas Masks Or Hoods                                                                                                                 | Issued  | Utility - NSPCT | AU      | 2003296552      | 12/19/03         | 2003296552 | 8/7/08     | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 900077  | Warning System For Individuals Working Under Hazardous Conditions                                                                                    | Issued  | Utility - NSPCT | AU      | 2004223297      | 2/26/04          | 2004223297 | 7/19/07    | MSA Auer GmbH | Jürgen Boss                                                                                                                   |
| 900079  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                      | Issued  | Utility - NSPCT | AU      | 2004224849      | 2/19/04          | 2004224849 | 7/19/07    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                                                             |
| 900090  | Blow Filter Device                                                                                                                                   | Issued  | Utility - NSPCT | AU      | 2005221263      | 1/27/05          | 2005221263 | 7/24/08    | MSA Auer GmbH | Frank Becker, Detlef Kielow, Martin Weber, Michael B Schulman                                                                 |
| 900095  | Coupling Device For A Compressed Gas Cylinder                                                                                                        | Issued  | Utility - NSPCT | AU      | 2005243566      | 5/9/05           | 2005243566 | 7/3/09     | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfram Weber                                                                        |
| 900100  | Oxygen-Producing Respiratory Protection Device                                                                                                       | Issued  | Utility - NSPCT | AU      | 2006207719      | 1/19/06          | 2006207719 | 2/24/11    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koshricht                                                                       |
| 900101  | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit | Issued  | Utility - NSPCT | AU      | 2006226722      | 3/23/06          | 2006226722 | 2/10/11    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                                                                                             |
| 964631  | Respiratory Half Mask                                                                                                                                | Issued  | Utility - NSPCT | AU      | 2008323109      | 10/1/08          | 2008323109 | 3/25/13    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                                                                                  |
| 965071  | Electrochemical Sensor with Diffusion Labyrinth                                                                                                      | Issued  | Utility - NSPCT | AU      | 2009248158      | 5/7/09           | 2009248158 | 7/24/14    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                                                                                   |
| 975412  | Mask Body For A Respiratory Half-Mask                                                                                                                | Issued  | Utility - NSPCT | AU      | 2008323126      | 10/15/08         | 2008323126 | 3/25/13    | MSA Auer GmbH | Detlef Kielow, Michael Horn                                                                                                   |
| 976088  | Polymer-Bonded Granular Adsorptive, Absorptive, Chemisorptive, or Catalytically Active Material                                                      | Issued  | Utility - NSPCT | AU      | 8614498         | 9/22/98          | 757555     | 6/12/03    | MSA Auer GmbH | Rudolf Nastke, Gerald Raifer, Helmut Remde, Thomas Krögerke, Gabriele Stadermann, Jannett Kohls, Martin Kurth, Dieter Lubkoll |
| 976096  | Method and Apparatus for Producing a Respiratory Filter                                                                                              | Issued  | Utility - NSPCT | AU      | 3880701         | 4/23/01          | 749889     | 10/17/02   | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krögerke                                                                                   |
| 976233  | Method For Manufacturing A Filter Body                                                                                                               | Issued  | Utility - NSPCT | AU      | 2935602         | 4/2/02           | 780072     | 6/9/05     | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koshricht                                                                                     |
| 1015971 | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation     | Pending | Utility - NSPCT | AU      | 2009321617      | 11/25/09         |            |            | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                                                                                   |
| 1015988 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                    | Pending | Utility - NSPCT | AU      | 2009321615      | 11/25/09         |            |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller                                                                   |
| 1567694 | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                               | Pending | Utility - NSPCT | AU      | 2012330453      | 10/25/12         |            |            | MSA Auer GmbH | Ralf Warratz                                                                                                                  |
| 964632  | Respiratory Half Mask                                                                                                                                | Pending | Utility - NSPCT | BR      | PI08181128      | 10/1/08          |            |            | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                                                                                  |

## Active Patents - MSA Auer

Dec 2, 2014

| FIP ID  | TITLE                                                                                                                                                      | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO.       | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                 |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|---------|-----------------|------------------|------------------|------------|---------------|-------------------------------------------------------------|
| 975413  | Mask Body For A Respiratory Half-Mask                                                                                                                      | Published | Utility - NSPCT | BR      | P108181098      | 10/15/08         |                  |            | MSA Auer GmbH | Detlef Kielow, Michael Horn                                 |
| 1342243 | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                                                         | Published | Utility - NSPCT | BR      | BR1120130079878 | 10/5/11          |                  |            | MSA Auer GmbH | Axel Schubert                                               |
| 1567414 | COUPLING DEVICE FOR A BREATHING APPARATUS                                                                                                                  | Pending   | Utility - NSPCT | BR      | BR1120140185522 | 2/8/13           |                  |            | MSA Auer GmbH | Peter V Kling, Peter Kadow, Lukasz Niewiadomski             |
| 1648498 | Verfahren und Vorrichtung zur Detektion der Konzentration mindestens einer gasförmigen Zielsubstanz und Verwendung einer Vorrichtung - Using an NH3 Sensor | Pending   | Utility - NSPCT | BR      | 1120140293767   | 3/15/13          |                  |            | MSA Auer GmbH | Ralf Warratz, Martin Weber                                  |
| 900239  | Head Harness For A Respirator                                                                                                                              | Issued    | Utility - NSPCT | CA      | 2438300         | 7/29/02          | 2438300          | 9/16/08    | MSA Auer GmbH | Michael Horn                                                |
| 965072  | Electrochemical Sensor with Diffusion Labyrinth                                                                                                            | Published | Utility - NSPCT | CA      | 2724207         | 5/7/09           |                  |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                 |
| 976097  | Method and Apparatus for Producing a Respiratory Filter                                                                                                    | Issued    | Utility - NSPCT | CA      | 2343858         | 4/12/01          | 2343858          | 10/24/06   | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Kirgerke                 |
| 976234  | Method For Manufacturing A Filter Body                                                                                                                     | Issued    | Utility - NSPCT | CA      | 2380132         | 4/2/02           | 2380132          | 2/19/08    | MSA Auer GmbH | Gabriele Stadermann, Karl-Helinz Koehricht                  |
| 1015972 | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation           | Pending   | Utility - NSPCT | CA      | 2745237         | 11/25/09         |                  |            | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                 |
| 1015989 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                          | Pending   | Utility - NSPCT | CA      | 2745236         | 11/25/09         |                  |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller |
| 1567695 | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                     | Pending   | Utility - NSPCT | CA      | 2853374         | 10/25/12         |                  |            | MSA Auer GmbH | Ralf Warratz                                                |
| 975409  | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit       | Issued    | Utility - EPPAT | CH      | 067226977       | 3/23/06          | 1861173          | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Helinz Feldner                          |
| 1078720 | Electrochemical Sensor with Diffusion Labyrinth                                                                                                            | Issued    | Utility - EPPAT | CH      | 097456909       | 5/7/09           | 2286210          | 8/31/11    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                 |
| 900268  | OXYGEN-GENERATING BREATHING APPARATUS                                                                                                                      | Issued    | Utility - NSPCT | CN      | 2006800026575   | 1/19/06          | 2011051800106820 | 5/23/11    | MSA Auer GmbH | Frank Krueger, Karl Helinz Feldner, Karl-Helinz Koehricht   |
| 900269  | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit       | Issued    | Utility - NSPCT | CN      | 2006800091023   | 3/23/06          | ZL2006800091023  | 5/25/11    | MSA Auer GmbH | Frank Krueger, Karl Helinz Feldner                          |
| 900316  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                            | Issued    | Utility - NSPCT | CN      | 2004800079075   | 2/19/04          | ZL2004800079075  | 11/18/09   | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann           |
| 900325  | Coupling Device For A Compressed Gas Cylinder                                                                                                              | Issued    | Utility - NSPCT | CN      | 2005800153379   | 5/9/05           | ZL2005800153379  | 7/1/09     | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfigene Weber    |
| 964633  | Respiratory Half Mask                                                                                                                                      | Issued    | Utility - NSPCT | CN      | 2008801171363   | 10/1/08          | ZL2008801171363  | 7/4/12     | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                |
| 965073  | Electrochemical Sensor with Diffusion Labyrinth                                                                                                            | Issued    | Utility - NSPCT | CN      | 2009801189160   | 5/7/09           | ZL2009801189160  | 10/1/14    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                 |
| 975414  | Mask Body For A Respiratory Half-Mask                                                                                                                      | Issued    | Utility - NSPCT | CN      | 2008801163206   | 10/15/08         | ZL2008801163206  | 5/30/12    | MSA Auer GmbH | Detlef Kielow, Michael Horn                                 |
| 1014324 | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation           | Issued    | Utility - NSPCT | CN      | 2009801478855   | 11/25/09         | 2009801478855    | 6/18/14    | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                 |
| 1015990 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                          | Published | Utility - NSPCT | CN      | 2009801478840   | 11/25/09         |                  |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller |
| 1342244 | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                                                         | Published | Utility - NSPCT | CN      | 2011800483976   | 10/5/11          |                  |            | MSA Auer GmbH | Axel Schubert                                               |
| 1538719 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                          | Pending   | Utility - DIV   | CN      | 2014100572852   | 11/25/09         |                  |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller |
| 1538737 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                          | Pending   | Utility - DIV   | CN      | 2014100564841   | 11/25/09         |                  |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller |

PATENT

REEL: 035449 FRAME: 0408

## Active Patents - MSA Auer

Dec 2, 2014

| FIG. ID | TITLE                                                                                                                                                      | STATUS  | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO.     | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                     |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|---------|-----------------|------------------|----------------|------------|---------------|-----------------------------------------------------------------|
| 1567415 | COUPLING DEVICE FOR A BREATHING APPARATUS                                                                                                                  | Pending | Utility - NSPCT | CN      | 2013800087028   | 8/2/13           |                |            | MSA Auer GmbH | Peter V Kling, Peter Kadow, Lukasz Niewiadomski                 |
| 1567696 | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                     | Pending | Utility - NSPCT | CN      |                 | 10/25/12         |                |            | MSA Auer GmbH | Ralf Warratz                                                    |
| 1648499 | Verfahren und Vorrichtung zur Detektion der Konzentration mindestens einer gasförmigen Zielsubstanz und Verwendung einer Vorrichtung - Using an NH3 Sensor | Pending | Utility - NSPCT | CN      |                 | 3/15/13          |                |            | MSA Auer GmbH | Ralf Warratz, Martin Weber                                      |
| 975272  | Protective Respirator With Shield Attachments                                                                                                              | Issued  | Utility - EPPAT | CZ      | 027767380       | 9/20/02          | 1439887        | 7/6/05     | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber |
| 975405  | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit       | Issued  | Utility - EPPAT | CZ      | 067226977       | 3/23/06          | 1861173        | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                               |
| 976371  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                            | Issued  | Utility - EPPAT | CZ      | 047124706       | 2/19/04          | 1606023        | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann               |
| 900425  | Strap For A Full Respirator Mask                                                                                                                           | Issued  | Utility - EPPAT | DE      | 501122435       | 10/10/01         | 50112243.5     | 3/21/07    | MSA Auer GmbH | John F Kuhn, Wilfried Hoffmann                                  |
| 900428  | Circuit Arrangement Comprising A Multi-Wire Line For Supplying Current And Emitting Signals                                                                | Issued  | Utility - EPPAT | DE      | 5020040025676   | 7/20/04          | 502004002567   | 1/3/07     | MSA Auer GmbH | Petrus Akkerman, Andreas Lemke, Ingmar Harry Boenke             |
| 900429  | Warning System For Individuals Working Under Hazardous Conditions                                                                                          | Issued  | Utility - EPPAT | DE      | 5020040031331   | 2/26/04          | 502004003133   | 3/7/07     | MSA Auer GmbH | Jürgen Boss                                                     |
| 900431  | Blow Filter Device                                                                                                                                         | Issued  | Utility - EPPAT | DE      | 5020050069978   | 1/27/05          | 502005006997   | 4/1/09     | MSA Auer GmbH | Frank Becker, Detlef Kielow, Martin Weber, Michael B Schulman   |
| 900432  | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit       | Issued  | Utility - EPPAT | DE      | 502006001335    | 3/23/06          | 502006001335   | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                               |
| 900442  | Head Harness For A Respirator                                                                                                                              | Issued  | Utility - EPPAT | DE      | 502102691       | 7/29/02          | 50210269       | 6/6/07     | MSA Auer GmbH | Michael Horn                                                    |
| 900443  | Connector For Respiratory Masks And/Or For Respiratory Apparatuses                                                                                         | Issued  | Utility - EPPAT | DE      | 502134089       | 9/10/02          | 50213408       | 4/1/09     | MSA Auer GmbH | Peter V Kling                                                   |
| 900444  | Filter Blower For Gas Masks Or Hoods                                                                                                                       | Issued  | Utility - EPPAT | DE      | 503053082       | 12/19/03         | 50305308.2     | 10/4/06    | MSA Auer GmbH | Axel Schubert                                                   |
| 900464  | Devices, Systems And Methods For Testing Gas Sensors And Correcting Gas Sensor Output                                                                      | Issued  | Utility - EPPAT | DE      | 057410300       | 4/28/05          | 602005011955.8 | 12/24/08   | MSA Auer GmbH | Towner B Scheffler                                              |
| 900838  | Bottle Support For Compressed-Air Bottles                                                                                                                  | Issued  | Utility - ORG   | DE      | 100279163       | 5/31/00          | 10027916.3     | 6/3/04     | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                |
| 900839  | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                                      | Issued  | Utility - ORG   | DE      | 100298389       | 6/19/00          | 10029838.9     | 9/2/04     | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                  |
| 900840  | Support Frame For A Respiratory Air Container                                                                                                              | Issued  | Utility - ORG   | DE      | 100301924       | 6/19/00          | 10030192.4     | 9/2/04     | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                  |
| 900843  | Method For Manufacturing A Filter Body                                                                                                                     | Issued  | Utility - ORG   | DE      | 101174357       | 4/3/01           | 10117435       | 1/12/06    | MSA Auer GmbH | Gabriele Stadermann, Karl-Helm Koehricht                        |
| 900844  | Strap Buckle For A Fastening Strap                                                                                                                         | Issued  | Utility - ORG   | DE      | 101194692       | 4/12/01          | 10119469       | 3/20/03    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                      |
| 900847  | Automatic-Lung Regulator For Compressed-Air Respiration Apparatus                                                                                          | Issued  | Utility - ORG   | DE      | 101250762       | 5/14/01          | 10125076.2     | 5/23/02    | MSA Auer GmbH | Carsten Leuschner, Jan Martin, Werner Meis                      |
| 900850  | Protective Respirator With Shield Attachments                                                                                                              | Issued  | Utility - ORG   | DE      | 10154683        | 10/29/01         | 10154683       | 7/14/05    | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber |
| 900851  | Connector For Respiratory Masks And/Or For Respiratory Apparatuses                                                                                         | Issued  | Utility - ORG   | DE      | 101592183       | 11/27/01         | 10159218.3     | 11/13/03   | MSA Auer GmbH | Peter V Kling                                                   |
| 900852  | Respiratory Protection Mask For A Compressed Air Breathing Apparatus                                                                                       | Issued  | Utility - ORG   | DE      | 101592191       | 11/27/01         | 10159219.1     | 9/29/05    | MSA Auer GmbH | Peter V Kling                                                   |
| 900854  | Blow Filter Device                                                                                                                                         | Issued  | Utility - ORG   | DE      | 1020040134537   | 3/11/04          | 102004013453   | 7/27/06    | MSA Auer GmbH | Frank Becker, Detlef Kielow, Martin Weber, Michael B Schulman   |

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| FIP ID | TITLE                                                                                                                                                        | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO.     | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                 |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|---------|-----------------|------------------|----------------|------------|---------------|-------------------------------------------------------------|
| 900855 | Coupling Device For A Compressed Gas Cylinder                                                                                                                | Issued    | Utility - ORG   | DE      | 1020040245975   | 5/13/04          | 102004024597   | 2/9/06     | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber     |
| 900856 | Breathing Mask For Wearing With Or Without A Safety Helmet                                                                                                   | Issued    | Utility - ORG   | DE      | 1020040383030   | 8/4/04           | 102004038303   | 9/15/05    | MSA Auer GmbH | Wilfried Hoffmann, Michael Horn, Elmar Schommer             |
| 900857 | Oxygen-Producing Respiratory Protection Device                                                                                                               | Issued    | Utility - ORG   | DE      | 1020050031765   | 1/19/05          | 102005003176   | 7/20/06    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koehricht     |
| 900858 | Breathing Apparatus With Oxygen Generating Chemical For Self Rescue                                                                                          | Issued    | Utility - ORG   | DE      | 1020050060129   | 2/4/05           | 102005006012   | 7/20/06    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                           |
| 900862 | Holder For Automatic Lung Devices                                                                                                                            | Issued    | Utility - ORG   | DE      | 1020070448971   | 9/13/07          | 102007044897.1 | 11/13/08   | MSA Auer GmbH | Carsten Leuschner                                           |
| 900864 | Mask Body For A Respiratory Half-Mask                                                                                                                        | Issued    | Utility - ORG   | DE      | 1020070552418   | 11/16/07         | 102007055241.8 | 10/29/09   | MSA Auer GmbH | Detlef Knielow, Michael Horn                                |
| 900866 | Arrangement For Detachably Connecting A Respirator Mask To A Hard Hat                                                                                        | Issued    | Utility - ORG   | DE      | 1020070634643   | 12/20/07         | 102007063464   | 6/10/09    | MSA Auer GmbH | Klaus Schmidtknecht                                         |
| 900868 | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                         | Issued    | Utility - ORG   | DE      | 102012504       | 1/11/02          | 10201250.4     | 5/28/03    | MSA Auer GmbH | Peter V Kling                                               |
| 900871 | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                                                                  | Issued    | Utility - ORG   | DE      | 102219540       | 5/14/02          | 10221954.0     | 1/15/04    | MSA Auer GmbH | Axel Schubert                                               |
| 900872 | Respiration Filter And Method For Producing The Same - Atemschutzfilter und Verfahren zu dessen Herstellung                                                  | Issued    | Utility - ORG   | DE      | 103042164       | 1/30/03          | 10304216       | 10/14/04   | MSA Auer GmbH | Andreas Haeuser, Keith Kruegel, Wilfried Hoffmann           |
| 900875 | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                              | Issued    | Utility - ORG   | DE      | 103141367       | 3/24/03          | 10314136       | 7/15/04    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann           |
| 900877 | Circuit Arrangement For Startup Current Limitation For Electronic Modules Connected To A Module Carrier                                                      | Issued    | Utility - ORG   | DE      | 103490728       | 10/14/03         | 10349072       | 2/3/05     | MSA Auer GmbH | Andreas Lenke                                               |
| 959481 | Holder For Automatic Lung Devices                                                                                                                            | Issued    | Utility - EPPAT | DE      | 087875688       | 8/29/08          | 502008001968.5 | 12/1/10    | MSA Auer GmbH | Carsten Leuschner                                           |
| 959502 | Oxygen-Producing Respiratory Protection Device                                                                                                               | Issued    | Utility - EPPAT | DE      | 5020060072254   | 1/19/06          | 502006007225.4 | 6/16/10    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koehricht     |
| 959553 | Breathing Apparatus With Oxygen Generating Chemical For Self Rescue                                                                                          | Issued    | Utility - EPPAT | DE      | 5020060077515   | 1/26/06          | 502006007751.5 | 9/1/10     | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                           |
| 965065 | Electrochemical Sensor with Diffusion Labyrinth - Elektrochemischer Sauerstoffsensoren                                                                       | Issued    | Utility - ORG   | DE      | 1020080243922   | 5/15/08          | 102008024392.2 | 11/17/11   | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                 |
| 965111 | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation             | Allowed   | Utility - ORG   | DE      | 1020080442402   | 12/1/08          |                |            | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                 |
| 965118 | Cartridge for Heating Breathable Air in Training Breathing Apparatus                                                                                         | Issued    | Utility - ORG   | DE      | 1020080419389   | 9/10/08          | 102008041938   | 5/29/13    | MSA Auer GmbH | Keith Kruegel, Karl Heinz Feldner                           |
| 965192 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                            | Published | Utility - ORG   | DE      | 1020080442380   | 12/1/08          |                |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller |
| 965202 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                            | Published | Utility - ORG   | DE      | 1020080442399   | 12/1/08          |                |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller |
| 975028 | Connection Between Breathing Mask and Automatic Lung                                                                                                         | Issued    | Utility - ORG   | DE      | 199340455       | 7/16/99          | 19934045       | 5/22/03    | MSA Auer GmbH | Carsten Leuschner                                           |
| 975066 | Valve for Compressed Gas Breathing Appliance                                                                                                                 | Issued    | Utility - ORG   | DE      | 199340587       | 7/19/99          | 19934058       | 7/8/04     | MSA Auer GmbH | Carsten Leuschner                                           |
| 975073 | Breathing Valve for Breathing Mask, has Valve Pin and Optionally Valve Plate Made of Material with Rubber-Elastic Properties to Dampen Vibrations            | Issued    | Utility - ORG   | DE      | 100201350       | 4/14/00          | 10020135.0     | 10/31/01   | MSA Auer GmbH | Andreas Haeuser, Wilfried Hoffmann                          |
| 975089 | Plug-in connection for coupling artificial lung to pressurized air supply has locking spring released by simultaneous operation of two opposing push-buttons | Issued    | Utility - ORG   | DE      | 103268308       | 6/12/03          | 10326830       | 6/24/04    | MSA Auer GmbH | Klaus Pampuch, Carsten Leuschner                            |
| 975593 | Connecting Part of a Breathing Mask                                                                                                                          | Issued    | Utility - ORG   | DE      | 199635986       | 12/23/99         | 19963598.6     | 2/22/07    | MSA Auer GmbH | Klaus Schmidtknecht                                         |

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| FP ID   | TITLE                                                                                                                                                        | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO.     | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                                                   |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|---------|-----------------|------------------|----------------|------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| 975737  | Breathing Connector for an Oxygen Producing Breathing Apparatus                                                                                              | Issued    | Utility - ORG   | DE      | 1020050059686   | 2/4/05           | 102005005968   | 7/20/06    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                                                                                             |
| 975783  | Replaceable Lens System                                                                                                                                      | Issued    | Utility - EPPAT | DE      | 500140626       | 12/21/00         | 50014062.6     | 2/14/07    | MSA Auer GmbH | Michael Horn, Hartmut Kintzel                                                                                                 |
| 975812  | Polymer-Bonded Granular Adsorptive, Absorptive Chemisorptive, or catalytically Active Material                                                               | Issued    | Utility - ORG   | DE      | 197143504       | 3/26/97          | 19714350       | 12/2/04    | MSA Auer GmbH | Rudolf Nastke, Gerald Raifer, Helmut Remde, Thomas Krügerke, Gabriele Stadermann, Jannett Kohls, Martin Kurth, Dieter Lubkoll |
| 975940  | Artificial Respiration Apparatus                                                                                                                             | Published | Utility - ORG   | DE      | 1020090308199   | 6/26/09          |                |            | MSA Auer GmbH | Peter Kadow, Florian Lux                                                                                                      |
| 975956  | Device and Process for Obtaining Intrinsic Safety in a Radio Transmitting - Anordnung und Verfahren zur Erzielung der Eigensicherheit eines Funktransmitters | Published | Utility - ORG   | DE      | 1020100474975   | 10/6/10          |                |            | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 976095  | Method and Apparatus for Producing a Respiratory Filter                                                                                                      | Issued    | Utility - ORG   | DE      | 100215823       | 4/27/00          | 10021582       | 7/15/04    | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Körgerke                                                                                   |
| 976315  | Method For Manufacturing A Filter Body                                                                                                                       | Issued    | Utility - EPPAT | DE      | 502008814       | 1/25/02          | 50200881       | 8/25/04    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehrich                                                                                      |
| 1027569 | Circuit Arrangement For Startup Current Limitation For Electronic Modules Connected To A Module Carrier                                                      | Issued    | Utility - EPPAT | DE      | 5020040125093   | 9/8/04           | 502004012509   | 5/11/11    | MSA Auer GmbH | Andreas Lemke                                                                                                                 |
| 1092691 | Electrochemical Sensor with Diffusion Labyrinth                                                                                                              | Issued    | Utility - EPPAT | DE      | 097456909       | 5/7/09           | 602009002459.0 | 8/31/11    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                                                                                   |
| 1092703 | Elektrochemischer Gassensor mit einer ionischen Flüssigkeit als Elektrolyt zum Nachweis von Ammoniak und Aminen - NH3 Ionic Liquid Sensor                    | Published | Utility - ORG   | DE      | 1020110851747   | 10/25/11         |                |            | MSA Auer GmbH | Ralf Warratz                                                                                                                  |
| 1095959 | Respiration Filter And Method For Producing The Same - Atemschutzfilter und Verfahren zu dessen Herstellung                                                  | Issued    | Utility - EPPAT | DE      | 503138762       | 12/19/03         | 50313876       | 8/3/11     | MSA Auer GmbH | Andreas Haeser, Keith Kruegel, Wilfried Hoffmann                                                                              |
| 1107843 | Elektrochemischer Gassensor mit einer ionischen Flüssigkeit als Elektrolyt zum Nachweis von Ammoniak und Aminen - NH3 Ionic Liquid Sensor                    | Published | Utility - ORG   | DE      | 1020110875921   | 12/1/11          |                |            | MSA Auer GmbH | Ralf Warratz                                                                                                                  |
| 1192869 | Kopplungsvorrichtung für ein Atemschutzgerät - Medium Pressure connection between two escape breathing apparatus                                             | Published | Utility - ORG   | DE      | 1020122019456   | 2/9/12           |                |            | MSA Auer GmbH | Peter V Kling, Peter Kadow, Lukasz Newiadomski                                                                                |
| 1192988 | Breathing Mask For Wearing With Or Without A Safety Helmet - Atemschutz-Vollmaske zum Tragen mit oder ohne Schutzhelm                                        | Issued    | Utility - NSPCT | DE      | 5020050123972   | 7/25/05          | 502005012397   | 1/25/12    | MSA Auer GmbH | Klaus Schmidtke, Wilfried Hoffmann, Michael Horn, Elmar Schommer                                                              |
| 1200964 | Mask Body For A Respiratory Half-Mask                                                                                                                        | Issued    | Utility - EPPAT | DE      | EP088490784     | 10/15/08         | 502008007152   | 5/2/12     | MSA Auer GmbH | Detlef Kielow, Michael Horn                                                                                                   |
| 1263758 | Respiratory Half Mask - Atemschutz-Halbmaske                                                                                                                 | Issued    | Utility - EPPAT | DE      | 088509476       | 10/1/08          | 502008007348.5 | 5/30/12    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                                                                                  |
| 1263788 | Hood For A Protective Mask                                                                                                                                   | Issued    | Utility - EPPAT | DE      | EP2009157204    | 4/2/09           | 502009003661   | 5/30/12    | MSA Auer GmbH | Peter Kadow                                                                                                                   |
| 1304912 | Verfahren und Vorrichtung zur Detektion der Konzentration mindestens einer gasförmigen Zielsubstanz und Verwendung einer Vorrichtung - Using an NH3 Sensor   | Pending   | Utility - ORG   | DE      | 1020122112154   | 6/28/12          |                |            | MSA Auer GmbH | Ralf Warratz, Martin Weber                                                                                                    |
| 1328666 | Atemschutzhäube - (Mask/Hood)                                                                                                                                | Published | Utility - ORG   | DE      | 1020122151168   | 8/24/12          |                |            | MSA Auer GmbH | Jürgen Boss, Peter Kadow                                                                                                      |
| 1364114 | Haltesystem für eine Person und Trägerplatte für ein Atemschutzgerät                                                                                         | Published | Utility - ORG   | DE      | 1020120220022   | 11/12/12         |                |            | MSA Auer GmbH | Markus Wind                                                                                                                   |
| 1400868 | Sensor-Signalerfassung                                                                                                                                       | Pending   | Utility - ORG   | DE      | 1020132230214   | 11/12/13         |                |            | MSA Auer GmbH | Andreas Lemke                                                                                                                 |
| 1426055 | Special training device for AirElite 4h, based on Potassium Superoxide                                                                                       | Pending   | Utility - ORG   | DE      | 10201321382533  | 7/15/13          |                |            | MSA Auer GmbH | Keith Kruegel, Karl Heinz Feldner, Michael Freitag, Karl-Heinz Koehrich, Tino Grawe                                           |
| 1437515 | Fabric Harness with 4-Point Adjustment and Fix Forehead Attachment                                                                                           | Pending   | Utility - ORG   | DE      | 1020132239416   | 11/22/13         |                |            | MSA Auer GmbH | Carsten Leuschner, Michael Horn, Klaus Schmidtke                                                                              |

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| F.P. ID | TITLE                                                                                                                                                                                                                  | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO. | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                          |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|---------|-----------------|------------------|------------|------------|---------------|--------------------------------------------------------------------------------------|
| 1461841 | Simple Automatic Start Mechanism - Sicherungsvorrichtung für ein Ventil                                                                                                                                                | Pending   | Utility - ORG   | DE      | 1020132199562   | 10/1/13          |            |            | MSA Auer GmbH | Peter Kadow                                                                          |
| 1511249 | Advanced Registration at a Basestation for Wireless Communication                                                                                                                                                      | Pending   | Utility - ORG   | DE      | 1020142070279   | 4/11/14          |            |            | MSA Auer GmbH | Julian Moeller, Torsten Hofmann                                                      |
| 1511278 | Auto Power Saving Feature for Portable Gas Detector                                                                                                                                                                    | Pending   | Utility - ORG   | DE      | 1020142041589   | 3/6/14           |            |            | MSA Auer GmbH | Rene Kiewer, Ansgar Marco Schmidt, Gustavo Lopez, Marcel Hahne                       |
| 1544119 | Depassivation of Lithium Thionyl Chloride battery in a running Instrument - Verfahren zur Depassivierung einer Lithium-Thionyl-Batterie, eine Vorrichtung zur Durchführung des Verfahrens und eine Batterievorrichtung | Pending   | Utility - ORG   | DE      | 1020142064708   | 4/3/14           |            |            | MSA Auer GmbH | Rene Kiewer                                                                          |
| 1557705 | PM-CM Hose assembly                                                                                                                                                                                                    | Pending   | Utility - ORG   | DE      | 1020142065089   | 4/4/14           |            |            | MSA Auer GmbH | Wolfgang Weber, Thomas Kuba                                                          |
| 1617697 | Special training device for AirElite 4h, based on Potassium Superoxide                                                                                                                                                 | Pending   | Utility - ORG   | DE      | 1020142120209   | 6/23/14          |            |            | MSA Auer GmbH | Keith Kruegel, Karl Heinz Feldner, Michael Freltag, Karl-Heinz Koehricht, Tino Grawe |
| 1675517 | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                                                                                                                     | Pending   | Utility - EPPAT | DE      | 117791111       | 10/5/11          |            |            | MSA Auer GmbH | Axel Schubert                                                                        |
| 842492  | Respiration Filter And Method For Producing The Same - Atemschutzfilter und Verfahren zu dessen Herstellung                                                                                                            | Issued    | Utility - NSPCT | EP      | 038155305       | 12/19/03         | 1513590    | 8/3/11     | MSA Auer GmbH | Andreas Haeuser, Keith Kruegel, Wilfried Hoffmann                                    |
| 904853  | Arrangement For Detachably Connecting A Respirator Mask To A Hard Hat                                                                                                                                                  | Published | Utility - NSPCT | EP      | 088656327       | 12/11/08         |            |            | MSA Auer GmbH | Klaus Schmidtknecht                                                                  |
| 965120  | Cartridge for Heating Breathable Air In Training Breathing Apparatus                                                                                                                                                   | Published | Utility - ORG   | EP      | 091695304       | 9/4/09           |            |            | MSA Auer GmbH | Keith Kruegel, Karl Heinz Feldner                                                    |
| 1015973 | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation                                                                       | Published | Utility - NSPCT | EP      | 097608517       | 11/25/09         |            |            | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                                          |
| 1015992 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                                                                                      | Published | Utility - NSPCT | EP      | 097608483       | 11/25/09         |            |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller                          |
| 1153973 | Artificial Lung                                                                                                                                                                                                        | Published | Utility - NSPCT | EP      | 107261091       | 6/25/10          |            |            | MSA Auer GmbH | Peter Kadow, Florian Lux                                                             |
| 1342245 | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                                                                                                                     | Published | Utility - NSPCT | EP      | 117791111       | 10/5/11          |            |            | MSA Auer GmbH | Axel Schubert                                                                        |
| 1567416 | COUPLING DEVICE FOR A BREATHING APPARATUS                                                                                                                                                                              | Published | Utility - NSPCT | EP      |                 | 2/8/13           |            |            | MSA Auer GmbH | Peter V Kling, Peter Kadow, Lukasz Niewiadomski                                      |
| 1567697 | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                                                                                 | Pending   | Utility - NSPCT | EP      | EP127835536     | 10/25/12         |            |            | MSA Auer GmbH | Ralf Warratz                                                                         |
| 1648500 | Verfahren und Vorrichtung zur Detektion der Konzentration mindestens einer gasförmigen Zielsubstanz und Verwendung einer Vorrichtung - Using an NH3 Sensor                                                             | Pending   | Utility - NSPCT | EP      |                 | 3/15/13          |            |            | MSA Auer GmbH | Ralf Warratz, Martin Weber                                                           |
| 900548  | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                                                                                                  | Issued    | Utility - EPPAT | ES      | 019359603       | 4/6/01           | 1207942    | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                       |
| 900549  | Support Frame For A Respiratory Air Container                                                                                                                                                                          | Issued    | Utility - EPPAT | ES      | 019359629       | 4/6/01           | 1253967    | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                       |
| 900550  | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                                                                                   | Issued    | Utility - EPPAT | ES      | 028060168       | 12/21/02         | 1523439    | 10/19/05   | MSA Auer GmbH | Peter V Kling                                                                        |
| 900553  | Bottle Support For Compressed-Air Bottles                                                                                                                                                                              | Issued    | Utility - EPPAT | ES      | 019359611       | 4/6/01           | 1255587    | 6/28/06    | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                                     |
| 900554  | Strap Buckle For A Fastening Strap                                                                                                                                                                                     | Issued    | Utility - EPPAT | ES      | 027402619       | 4/12/02          | 1494558    | 9/13/06    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                                           |
| 900555  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                                                                                        | Issued    | Utility - EPPAT | ES      | 047124706       | 2/19/04          | 1606023    | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                    |

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| FIP ID | TITLE                                                                                                                                                | STATUS | CATEGORY        | COUNTRY | APPLICATION NO | APPLICATION DATE | PATENT NO | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                     |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------|---------|----------------|------------------|-----------|------------|---------------|-----------------------------------------------------------------|
| 900556 | Circuit Arrangement Comprising A Multi-Wire Line For Supplying Current And Emitting Signals                                                          | Issued | Utility - EPPAT | ES      | 047624994      | 7/20/04          | 1649435   | 1/3/07     | MSA Auer GmbH | Petrus Akkerman, Andreas Lemke, Ingmar Herzy Boenigk            |
| 900557 | Automatic-Lung Regulator For Compressed-Air Respiration Apparatus                                                                                    | Issued | Utility - EPPAT | ES      | 027196781      | 3/12/02          | 1387708   | 1/17/07    | MSA Auer GmbH | Carsten Leuschner, Jan Martin, Werner Mels                      |
| 900558 | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                                                          | Issued | Utility - EPPAT | ES      | 037202520      | 3/27/03          | 1504249   | 3/7/07     | MSA Auer GmbH | Axel Schubert                                                   |
| 900561 | Coupling Device For A Compressed Gas Cylinder                                                                                                        | Issued | Utility - EPPAT | ES      | 057559338      | 5/9/05           | 2306168   | 4/16/08    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfram Weber          |
| 900562 | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit | Issued | Utility - EPPAT | ES      | 067226977      | 3/23/06          | 1861173   | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                               |
| 959504 | Oxygen-Producing Respiratory Protection Device                                                                                                       | Issued | Utility - EPPAT | ES      | 067224576      | 1/19/06          | 1838394   | 6/16/10    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koehrdicht        |
| 975258 | Head Harness For A Respirator                                                                                                                        | Issued | Utility - EPPAT | FI      | 027670736      | 7/29/02          | 1337299   | 6/6/07     | MSA Auer GmbH | Michael Horn                                                    |
| 975273 | Protective Respirator With Shield Attachments                                                                                                        | Issued | Utility - EPPAT | FI      | 027767300      | 9/20/02          | 1439887   | 7/6/05     | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber |
| 975782 | Replaceable Lens System                                                                                                                              | Issued | Utility - EPPAT | FI      | 002504488      | 12/21/00         | 1114654   | 2/14/07    | MSA Auer GmbH | Michael Horn, Hartmut Kintzel                                   |
| 905140 | Automatic-Lung Regulator For Compressed-Air Respiration Apparatus                                                                                    | Issued | Utility - EPPAT | FR      | 027196781      | 3/12/02          | 1387708   | 1/17/07    | MSA Auer GmbH | Carsten Leuschner, Jan Martin, Werner Mels                      |
| 905173 | Blow Filter Device                                                                                                                                   | Issued | Utility - EPPAT | FR      | 057149148      | 1/27/05          | 1722865   | 4/1/09     | MSA Auer GmbH | Frank Becker, Detlef Kielow, Martin Weber, Michael B Schulman   |
| 905223 | Bottle Support For Compressed-Air Bottles                                                                                                            | Issued | Utility - EPPAT | FR      | 019359611      | 4/6/01           | 1255587   | 6/28/06    | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                |
| 918311 | Connector For Respiratory Masks And/Or For Respiratory Apparatuses                                                                                   | Issued | Utility - EPPAT | FR      | 020903258      | 9/10/02          | 1314453   | 4/1/09     | MSA Auer GmbH | Peter V Kling                                                   |
| 959480 | Holder For Automatic Lung Devices                                                                                                                    | Issued | Utility - EPPAT | FR      | 087875688      | 8/29/08          | 2188019   | 12/1/10    | MSA Auer GmbH | Carsten Leuschner                                               |
| 959501 | Oxygen-Producing Respiratory Protection Device                                                                                                       | Issued | Utility - EPPAT | FR      | 067224576      | 1/19/06          | 1838394   | 6/16/10    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koehrdicht        |
| 959552 | Breathing Apparatus With Oxygen Generating Chemical For Self Rescue                                                                                  | Issued | Utility - EPPAT | FR      | 060900115      | 1/26/06          | 1688163   | 9/1/10     | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                               |
| 964592 | Circuit Arrangement Comprising A Multi-Wire Line For Supplying Current And Emitting Signals                                                          | Issued | Utility - EPPAT | FR      | 047624994      | 7/20/04          | 1649435   | 1/3/07     | MSA Auer GmbH | Petrus Akkerman, Andreas Lemke, Ingmar Herzy Boenigk            |
| 975240 | Warning System For Individuals Working Under Hazardous Conditions                                                                                    | Issued | Utility - EPPAT | FR      | 047147178      | 2/26/04          | 1606781   | 3/7/07     | MSA Auer GmbH | Jürgen Boss                                                     |
| 975248 | Strap Buckle For A Fastening Strap                                                                                                                   | Issued | Utility - EPPAT | FR      | 027402619      | 4/12/02          | 1494558   | 9/13/06    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                      |
| 975255 | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                                                          | Issued | Utility - EPPAT | FR      | 037202520      | 3/27/03          | 1504249   | 3/7/07     | MSA Auer GmbH | Axel Schubert                                                   |
| 975259 | Head Harness For A Respirator                                                                                                                        | Issued | Utility - EPPAT | FR      | 027670736      | 7/29/02          | 1337299   | 6/6/07     | MSA Auer GmbH | Michael Horn                                                    |
| 975274 | Protective Respirator With Shield Attachments                                                                                                        | Issued | Utility - EPPAT | FR      | 027767300      | 9/20/02          | 1439887   | 7/6/05     | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber |
| 975406 | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit | Issued | Utility - EPPAT | FR      | 067226977      | 3/23/06          | 1861173   | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                               |
| 975432 | Filter Blower For Gas Masks Or Hoods                                                                                                                 | Issued | Utility - EPPAT | FR      | 038158234      | 12/19/03         | 1594576   | 10/4/06    | MSA Auer GmbH | Axel Schubert                                                   |
| 975448 | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                 | Issued | Utility - EPPAT | FR      | 028060168      | 12/21/02         | 1523439   | 10/19/05   | MSA Auer GmbH | Peter V Kling                                                   |
| 975476 | Strap For A Full Respirator Mask                                                                                                                     | Issued | Utility - EPPAT | FR      | 012703617      | 10/10/01         | 1341583   | 3/21/07    | MSA Auer GmbH | John F Kuhn, Wilfried Hoffmann                                  |
| 975489 | Support Frame For A Respiratory Air Container                                                                                                        | Issued | Utility - EPPAT | FR      | 019359629      | 4/6/01           | 1253967   | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                  |
| 975508 | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                                | Issued | Utility - EPPAT | FR      | 019359603      | 4/6/01           | 1207942   | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                  |

| Active Patents - MSA Auer |                                                                                                                       |         |                 |         |                 |                  |            |            |               |                                                                                                                               |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------|---------|-----------------|---------|-----------------|------------------|------------|------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| Dec 2, 2014               |                                                                                                                       |         |                 |         |                 |                  |            |            |               |                                                                                                                               |
| FIP ID                    | TITLE                                                                                                                 | STATUS  | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO. | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                                                   |
| 975609                    | Connecting Part of a Breathing Mask                                                                                   | Issued  | Utility - EPPAT | FR      | 002504462       | 12/20/00         | 1110582    | 2/22/06    | MSA Auer GmbH | Klaus Schmidtke                                                                                                               |
| 975821                    | Polymer-Bonded Granular Adsorptive, Absorptive Chemisorptive, or catalytically Active Material                        | Issued  | Utility - EPPAT | FR      | 981181142       | 9/24/98          | 0988889    | 1/19/05    | MSA Auer GmbH | Rudolf Nastke, Gerald Rafler, Helmut Rende, Thomas Krügerke, Gabriele Stadermann, Jannett Kohls, Martin Kurth, Dieter Lubkoll |
| 976126                    | Method and Apparatus for Producing a Respiratory Filter                                                               | Issued  | Utility - EPPAT | FR      | 012500989       | 3/20/01          | 1149605    | 3/1/06     | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krügerke                                                                                   |
| 976314                    | Method For Manufacturing A Filter Body                                                                                | Issued  | Utility - EPPAT | FR      | 020900379       | 1/25/02          | 1247572    | 8/25/04    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehrich                                                                                      |
| 976372                    | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                       | Issued  | Utility - EPPAT | FR      | 047124706       | 2/19/04          | 1606023    | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                                                             |
| 1027568                   | Circuit Arrangement For Startup Current Limitation For Electronic Modules Connected To A Module Carrier               | Issued  | Utility - EPPAT | FR      | 047867676       | 9/8/04           | 1673845    | 5/11/11    | MSA Auer GmbH | Andreas Lemke                                                                                                                 |
| 1078606                   | Electrochemical Sensor with Diffusion Labyrinth                                                                       | Issued  | Utility - EPPAT | FR      | 097456909       | 5/7/09           | 2286210    | 8/31/11    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                                                                                   |
| 1082808                   | Respiration Filter And Method For Producing The Same - Atemschutzfilter und Verfahren zu dessen Herstellung           | Issued  | Utility - EPPAT | FR      | 038155305       | 12/19/03         | 1513590    | 8/3/11     | MSA Auer GmbH | Andreas Haeuser, Keith Kruegel, Wilfried Hoffmann                                                                             |
| 1192987                   | Breathing Mask For Wearing With Or Without A Safety Helmet - Atemschutz-Vollmaske zum Tragen mit oder ohne Schutzhelm | Issued  | Utility - NSPCT | FR      | 057712317       | 7/25/05          | 1776163    | 1/25/12    | MSA Auer GmbH | Klaus Schmidtke, Wilfried Hoffmann, Michael Horn, Elmar Schommer                                                              |
| 1200963                   | Mask Body For A Respiratory Half-Mask                                                                                 | Issued  | Utility - EPPAT | FR      | EP088490784     | 10/15/08         | EP2209531  | 5/2/12     | MSA Auer GmbH | Detlef Kielow, Michael Horn                                                                                                   |
| 1263756                   | Respiratory Half Mask - Atemschutz-Halbmaske                                                                          | Issued  | Utility - EPPAT | FR      | 088509476       | 10/1/08          | 2 209 532  | 5/30/12    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                                                                                  |
| 1263787                   | Hood For A Protective Mask                                                                                            | Issued  | Utility - EPPAT | FR      | EP2009157204    | 4/2/09           | 2106825    | 5/30/12    | MSA Auer GmbH | Peter Kadow                                                                                                                   |
| 1675516                   | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                    | Pending | Utility - EPPAT | FR      | 117791111       | 10/5/11          |            |            | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 905141                    | Automatic-Lung Regulator For Compressed-Air Respiration Apparatus                                                     | Issued  | Utility - EPPAT | GB      | 027196781       | 3/12/02          | 1387708    | 1/17/07    | MSA Auer GmbH | Carsten Leuschner, Jan Martin, Werner Mels                                                                                    |
| 905174                    | Blow Filter Device                                                                                                    | Issued  | Utility - EPPAT | GB      | 057149148       | 1/27/05          | 1727865    | 4/1/09     | MSA Auer GmbH | Frank Becker, Detlef Kielow, Martin Weber, Michael B Schulman                                                                 |
| 905226                    | Bottle Support For Compressed-Air Bottles                                                                             | Issued  | Utility - EPPAT | GB      | 019359611       | 4/6/01           | 1255587    | 6/28/06    | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                                                                              |
| 918313                    | Connector For Respiratory Masks And/Or For Respiratory Apparatuses                                                    | Issued  | Utility - EPPAT | GB      | 020903258       | 9/10/02          | 1314453    | 4/1/09     | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 959482                    | Holder For Automatic Lung Devices                                                                                     | Issued  | Utility - EPPAT | GB      | 087875688       | 8/29/08          | 2188019    | 12/1/10    | MSA Auer GmbH | Carsten Leuschner                                                                                                             |
| 959505                    | Oxygen-Producing Respiratory Protection Device                                                                        | Issued  | Utility - EPPAT | GB      | 067224576       | 1/19/06          | 1838394    | 6/16/10    | MSA Auer GmbH | Frank Krueger, Karl-Heinz Feldner, Karl-Heinz Koehrich                                                                        |
| 959554                    | Breathing Apparatus With Oxygen Generating Chemical For Self Rescue                                                   | Issued  | Utility - EPPAT | GB      | 060900115       | 1/26/06          | 1688163    | 9/1/10     | MSA Auer GmbH | Frank Krueger, Karl-Heinz Feldner                                                                                             |
| 964211                    | Coupling Device For A Compressed Gas Cylinder                                                                         | Issued  | Utility - EPPAT | GB      | 057559338       | 5/9/05           | 1745231    | 4/16/08    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfram Weber                                                                        |
| 964449                    | Respiratory Protection Mask For A Compressed Air Breathing Apparatus                                                  | Issued  | Utility - EPPAT | GB      | 027720580       | 9/10/02          | 1448271    | 3/1/06     | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 964594                    | Circuit Arrangement Comprising A Multi-Wire Line For Supplying Current And Emission Signals                           | Issued  | Utility - EPPAT | GB      | 047624994       | 7/20/04          | 1649435    | 1/3/07     | MSA Auer GmbH | Petrus Akkerman, Andreas Lemke, Ingmar Herz Boenle                                                                            |
| 975244                    | Warning System For Individuals Working Under Hazardous Conditions                                                     | Issued  | Utility - EPPAT | GB      | 047147178       | 2/26/04          | 1606781    | 3/7/07     | MSA Auer GmbH | Jürgen Boss                                                                                                                   |
| 975251                    | Strap Buckle For A Fastening Strap                                                                                    | Issued  | Utility - EPPAT | GB      | 027402619       | 4/12/02          | 1494558    | 9/13/06    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                                                                                    |
| 975257                    | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                           | Issued  | Utility - EPPAT | GB      | 037202520       | 3/27/03          | 1504249    | 3/7/07     | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 975262                    | Head Harness For A Respirator                                                                                         | Issued  | Utility - EPPAT | GB      | 027670736       | 7/29/02          | 1337299    | 6/6/07     | MSA Auer GmbH | Michael Horn                                                                                                                  |

## Active Patents - MSA Auer

Dec 2, 2014

| FIP ID  | TITLE                                                                                                                                                | STATUS  | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO. | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                                                   |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|---------|-----------------|------------------|------------|------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| 975277  | Protective Respirator With Shield Attachments                                                                                                        | Issued  | Utility - EPPAT | GB      | 027767300       | 9/20/02          | 1439887    | 7/6/05     | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber                                                               |
| 975408  | Method And Arrangement For Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit | Issued  | Utility - EPPAT | GB      | 067226977       | 3/23/06          | 1861173    | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                                                                                             |
| 975435  | Filter Blower For Gas Masks Or Hoods                                                                                                                 | Issued  | Utility - EPPAT | GB      | 038158234       | 12/19/03         | 1594576    | 10/4/06    | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 975453  | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                 | Issued  | Utility - EPPAT | GB      | 028060168       | 12/21/02         | 1523439    | 10/19/05   | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 975477  | Strap For A Full Respirator Mask                                                                                                                     | Issued  | Utility - EPPAT | GB      | 012703617       | 10/10/01         | 1341583    | 3/21/07    | MSA Auer GmbH | John F Kuhn, Wilfried Hoffmann                                                                                                |
| 975492  | Support Frame For A Respiratory Air Container                                                                                                        | Issued  | Utility - EPPAT | GB      | 019359629       | 4/6/01           | 1253967    | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 975511  | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                                | Issued  | Utility - EPPAT | GB      | 019359603       | 4/6/01           | 1207942    | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 975610  | Connecting Part of a Breathing Mask                                                                                                                  | Issued  | Utility - EPPAT | GB      | 002504462       | 12/20/00         | 1110582    | 2/22/06    | MSA Auer GmbH | Klaus Schmidtke                                                                                                               |
| 975785  | Replaceable Lens System                                                                                                                              | Issued  | Utility - EPPAT | GB      | 002504488       | 12/21/00         | 1114654    | 2/14/07    | MSA Auer GmbH | Michael Horn, Hartmut Kintzel                                                                                                 |
| 975823  | Polymer-Bonded Granular Adsorptive, Absorptive Chemisorptive, or catalytically Active Material                                                       | Issued  | Utility - EPPAT | GB      | 981181142       | 9/24/98          | 0988889    | 1/19/05    | MSA Auer GmbH | Rudolf Nastke, Gerold Rafter, Heilmut Remde, Thomas Krueger, Gabriele Stadermann, Jannett Kohls, Martin Kurth, Dieter Lustoll |
| 976130  | Method and Apparatus for Producing a Respiratory Filter                                                                                              | Issued  | Utility - EPPAT | GB      | 012500989       | 3/20/01          | 1149605    | 3/1/06     | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krueger                                                                                    |
| 976318  | Method For Manufacturing A Filter Body                                                                                                               | Issued  | Utility - EPPAT | GB      | 020900379       | 1/25/02          | 1247572    | 8/25/04    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehricht                                                                                     |
| 976375  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                      | Issued  | Utility - EPPAT | GB      | 047124706       | 2/19/04          | 1606023    | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                                                             |
| 1027570 | Circuit Arrangement For Startup Current Limitation For Electronic Modules Connected To A Module Carrier                                              | Issued  | Utility - EPPAT | GB      | 047867676       | 9/8/04           | 1673845    | 5/11/11    | MSA Auer GmbH | Andreas Lemke                                                                                                                 |
| 1078613 | Respiration Filter And Method For Producing The Same - Atemschutzfilter und Verfahren zu dessen Herstellung                                          | Issued  | Utility - EPPAT | GB      | 038155305       | 12/19/03         | 1513590    | 8/3/11     | MSA Auer GmbH | Andreas Haeuser, Keith Kruegel, Wilfried Hoffmann                                                                             |
| 1078728 | Electrochemical Sensor with Diffusion Labyrinth                                                                                                      | Issued  | Utility - EPPAT | GB      | 097456909       | 5/7/09           | 2286210    | 8/31/11    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                                                                                   |
| 1192989 | Breathing Mask For Wearing With Or Without A Safety Helmet - Atemschutz-Vollmaske zum Tragen mit oder ohne Schutzhelm                                | Issued  | Utility - NSPCT | GB      | 057712317       | 7/25/05          | 1776163    | 1/25/12    | MSA Auer GmbH | Klaus Schmidtke, Wilfried Hoffmann, Michael Horn, Elmar Schommer                                                              |
| 1200967 | Mask Body For A Respiratory Half-Mask                                                                                                                | Issued  | Utility - EPPAT | GB      | EP088490784     | 10/15/08         | EP2209531  | 5/2/12     | MSA Auer GmbH | Detlef Kielow, Michael Horn                                                                                                   |
| 1263761 | Respiratory Half Mask - Atemschutz-Halbmaste                                                                                                         | Issued  | Utility - EPPAT | GB      | 0885094761269   | 10/1/08          | 2 209 532  | 5/30/12    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                                                                                  |
| 1263789 | Hood For A Protective Mask                                                                                                                           | Issued  | Utility - EPPAT | GB      | EP2009157204    | 4/2/09           | 2106825    | 5/30/12    | MSA Auer GmbH | Peter Kadow                                                                                                                   |
| 1675518 | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                                                   | Pending | Utility - EPPAT | GB      | 117791111       | 10/5/11          |            |            | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 905224  | Bottle Support For Compressed-Air Bottles                                                                                                            | Issued  | Utility - EPPAT | IT      | 019359611       | 4/6/01           | 1255587    | 6/28/06    | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                                                                              |
| 918312  | Connector For Respiratory Masks And/Or For Respiratory Apparatuses                                                                                   | Issued  | Utility - EPPAT | IT      | 020903258       | 9/10/02          | 1314453    | 4/1/09     | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 964208  | Coupling Device For A Compressed Gas Cylinder                                                                                                        | Issued  | Utility - EPPAT | IT      | 057559338       | 5/9/05           | 1745231    | 4/16/08    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber                                                                       |
| 964593  | Circuit Arrangement Comprising A Multi-Wire Line For Supplying Current And Emitting Signals                                                          | Issued  | Utility - EPPAT | IT      | 047624994       | 7/20/04          | 1649435    | 1/3/07     | MSA Auer GmbH | Petrus Akkerman, Andreas Lemke, Ingmar Herr Boenke                                                                            |
| 975241  | Warning System For Individuals Working Under Hazardous Conditions                                                                                    | Issued  | Utility - EPPAT | IT      | 047147178       | 2/26/04          | 1606781    | 3/7/07     | MSA Auer GmbH | Jürgen Boss                                                                                                                   |
| 975249  | Strap Buckle For A Fastening Strap                                                                                                                   | Issued  | Utility - EPPAT | IT      | 027402619       | 4/12/02          | 1494558    | 9/13/06    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                                                                                    |
| 975256  | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                                                          | Issued  | Utility - EPPAT | IT      | 037202520       | 3/27/03          | 1504249    | 3/7/07     | MSA Auer GmbH | Axel Schubert                                                                                                                 |

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REEL: 035449 FRAME: 0415

| Active Patents - MSA Auer |                                                                                                                                                          |           |                 |         |                 |                  |             |            |               |                                                                 |
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|                           |                                                                                                                                                          |           |                 |         |                 |                  |             |            |               | Dec 2, 2014                                                     |
| FIP ID                    | TITLE                                                                                                                                                    | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO.  | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                     |
| 975260                    | Head Harness For A Respirator                                                                                                                            | Issued    | Utility - EPPAT | IT      | 027670736       | 7/29/02          | 1337299     | 6/6/07     | MSA Auer GmbH | Michael Horn                                                    |
| 975275                    | Protective Respirator With Shield Attachments                                                                                                            | Issued    | Utility - EPPAT | IT      | 027767300       | 9/20/02          | 1439887     | 7/6/05     | MSA Auer GmbH | Klaus D Dohrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber |
| 975433                    | Filter Blower For Gas Masks Or Hoods                                                                                                                     | Issued    | Utility - EPPAT | IT      | 038158234       | 12/19/03         | 1594576     | 10/4/06    | MSA Auer GmbH | Axel Schubert                                                   |
| 975449                    | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                     | Issued    | Utility - EPPAT | IT      | 028060168       | 12/21/02         | 1523439     | 10/19/05   | MSA Auer GmbH | Peter V Kling                                                   |
| 975490                    | Support Frame For A Respiratory Air Container                                                                                                            | Issued    | Utility - EPPAT | IT      | 019359629       | 4/6/01           | 1253967     | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haessler                                 |
| 975509                    | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                                    | Issued    | Utility - EPPAT | IT      | 019359603       | 4/6/01           | 1207942     | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haessler                                 |
| 976127                    | Method and Apparatus for Producing a Respiratory Filter                                                                                                  | Issued    | Utility - EPPAT | IT      | 012500989       | 3/20/01          | 1149605     | 3/1/06     | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krgerke                     |
| 976316                    | Method For Manufacturing A Filter Body                                                                                                                   | Issued    | Utility - EPPAT | IT      | 020900379       | 1/25/02          | 1247572     | 8/25/04    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehricht                       |
| 976373                    | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                          | Issued    | Utility - EPPAT | IT      | 047124706       | 2/19/04          | 1606023     | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann               |
| 1200965                   | Mask Body For A Respiratory Half-Mask                                                                                                                    | Issued    | Utility - EPPAT | IT      | EP088490784     | 10/15/08         | EP2209531   | 5/2/12     | MSA Auer GmbH | Detlef Kielow, Michael Horn                                     |
| 1263759                   | Respiratory Half Mask - Atemschutz-Halbmaske                                                                                                             | Issued    | Utility - EPPAT | IT      | 0885094761269   | 10/1/08          | 3520BE2012  | 5/30/12    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                    |
| 900740                    | Coupling Device For A Compressed Gas Cylinder                                                                                                            | Issued    | Utility - NSPCT | JP      | JP2007511858    | 5/9/05           | JP 4-547003 | 9/22/10    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber         |
| 976103                    | Method and Apparatus for Producing a Respiratory Filter                                                                                                  | Issued    | Utility - NSPCT | JP      | 2001115120      | 4/13/01          | 3580364     | 7/30/04    | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krgerke                     |
| 976236                    | Method For Manufacturing A Filter Body                                                                                                                   | Issued    | Utility - NSPCT | JP      | 2002098816      | 4/1/02           | 3888924     | 12/8/06    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehricht                       |
| 1015974                   | Electrochemical Gas Sensor with An Ionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation | Issued    | Utility - NSPCT | JP      | 2011537965      | 11/25/09         | 5524231     | 4/18/14    | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                     |
| 1015993                   | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                        | Issued    | Utility - NSPCT | JP      | 2011537961      | 11/25/09         | 5432276     | 12/13/13   | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller     |
| 1567698                   | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                   | Pending   | Utility - NSPCT | JP      | 100074332       | 10/25/12         |             |            | MSA Auer GmbH | Ralf Warratz                                                    |
| 1014204                   | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID ELECTROLYTE SYSTEM INCLUDING AT LEAST ONE MONOALKYLAMMONIUM, DIALKYLAMMONIUM, OR TRIALKYLAMMONIUM CATION | Published | Utility - NSPCT | KP      | 1020117012566   | 11/25/09         |             |            | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                     |
| 1015991                   | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                        | Published | Utility - NSPCT | KP      | 1020117015130   | 11/25/09         |             |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller     |
| 1567699                   | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                   | Pending   | Utility - NSPCT | KR      | 1020147013382   | 10/25/12         |             |            | MSA Auer GmbH | Ralf Warratz                                                    |
| 964209                    | Coupling Device For A Compressed Gas Cylinder                                                                                                            | Issued    | Utility - EPPAT | NL      | 057559338       | 5/9/05           | 1745231     | 4/16/08    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber         |
| 975242                    | Warning System For Individuals Working Under Hazardous Conditions                                                                                        | Issued    | Utility - EPPAT | NL      | 047147178       | 2/26/04          | 1606781     | 3/7/07     | MSA Auer GmbH | Jrgen Boss                                                     |
| 975407                    | Method And Arrangement for Determination Of The Residual Capacity Of Breathable Air For An Oxygen-Generating Breathing Apparatus Operated In Circuit     | Issued    | Utility - EPPAT | NL      | 067226977       | 3/23/06          | 1861173     | 8/13/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                               |

## Active Patents - MSA Auer

Dec 2, 2014

| PIP ID  | TITLE                                                                                                                                            | STATUS  | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO. | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                                                   |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------|---------|-----------------|------------------|------------|------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| 975822  | Polymer-Bonded Granular Adsorptive, Absorptive Chemisorptive, or Catalytically Active Material                                                   | Issued  | Utility - EPPAT | NL      | 981181142       | 9/24/98          | 0983889    | 1/19/05    | MSA Auer GmbH | Rudolf Nastke, Gerald Rafler, Helmut Remde, Thomas Krügerke, Gabriele Stadermann, Jannett Kohls, Martin Kurth, Dieter Lubkolt |
| 976128  | Method and Apparatus for Producing a Respiratory Filter                                                                                          | Issued  | Utility - EPPAT | NL      | 012500989       | 3/20/01          | 1149605    | 3/1/06     | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krügerke                                                                                   |
| 976374  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                  | Issued  | Utility - EPPAT | NL      | 047124705       | 2/19/04          | 1606023    | 9/27/06    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                                                             |
| 959503  | Oxygen-Producing Respiratory Protection Device                                                                                                   | Issued  | Utility - EPPAT | PL      | 067224576       | 1/19/06          | 1838394    | 6/16/10    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koehricht                                                                       |
| 1200966 | Mask Body For A Respiratory Half-Mask                                                                                                            | Issued  | Utility - EPPAT | PL      | EP088490784     | 10/15/08         | EP2209531  | 5/2/12     | MSA Auer GmbH | Detlef Kielow, Michael Horn                                                                                                   |
| 1263760 | Respiratory Half Mask - Atemschutz-Halbmaske                                                                                                     | Issued  | Utility - EPPAT | PL      | 0885094761269   | 10/1/08          | 2 209 532  | 5/30/12    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidke                                                                                   |
| 900791  | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                  | Issued  | Utility - NSPCT | RU      | 200518260012    | 2/19/04          | 2301694    | 6/27/07    | MSA Auer GmbH | Tanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                                                             |
| 900793  | Coupling Device For A Compressed Gas Cylinder                                                                                                    | Issued  | Utility - NSPCT | RU      | 200614410306    | 5/9/05           | RU2351831  | 4/10/09    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber                                                                       |
| 1015975 | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation | Issued  | Utility - NSPCT | RU      | 2011121754      | 11/25/09         | 2512675    | 2/11/14    | MSA Auer GmbH | Rolf Eckhardt, Ralf Warratz                                                                                                   |
| 1015994 | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                | Issued  | Utility - NSPCT | RU      | 2011121751      | 11/25/09         | 2502067    | 12/20/13   | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller                                                                   |
| 1567700 | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                           | Pending | Utility - NSPCT | RU      | 2014120795      | 10/25/12         |            |            | MSA Auer GmbH | Ralf Warratz                                                                                                                  |
| 905225  | Bottle Support For Compressed-Air Bottles                                                                                                        | Issued  | Utility - EPPAT | SE      | 019359611       | 4/6/01           | 1255587    | 6/28/06    | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                                                                              |
| 964210  | Coupling Device For A Compressed Gas Cylinder                                                                                                    | Issued  | Utility - EPPAT | SE      | 057559338       | 5/9/05           | 1745231    | 4/16/08    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber                                                                       |
| 975243  | Warning System For Individuals Working Under Hazardous Conditions                                                                                | Issued  | Utility - EPPAT | SE      | 047147178       | 2/26/04          | 1606781    | 3/7/07     | MSA Auer GmbH | Jürgen Boss                                                                                                                   |
| 975250  | Strap Buckle For A Fastening Strap                                                                                                               | Issued  | Utility - EPPAT | SE      | 027402619       | 4/12/02          | 1494558    | 9/13/06    | MSA Auer GmbH | Jürgen Boss, Peter V Kling                                                                                                    |
| 975261  | Head Harness For A Respirator                                                                                                                    | Issued  | Utility - EPPAT | SE      | 027670736       | 7/29/02          | 1337299    | 6/6/07     | MSA Auer GmbH | Michael Horn                                                                                                                  |
| 975276  | Protective Respirator With Shield Attachments                                                                                                    | Issued  | Utility - EPPAT | SE      | 027767300       | 9/20/02          | 1439887    | 7/6/05     | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber                                                               |
| 975434  | Filter Blower For Gas Masks Or Hoods                                                                                                             | Issued  | Utility - EPPAT | SE      | 038158234       | 12/19/03         | 1594576    | 10/4/06    | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 975452  | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                             | Issued  | Utility - EPPAT | SE      | 028060168       | 12/21/02         | 1523439    | 10/19/05   | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 975491  | Support Frame For A Respiratory Air Container                                                                                                    | Issued  | Utility - EPPAT | SE      | 019359629       | 4/6/01           | 1253967    | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 975510  | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                            | Issued  | Utility - EPPAT | SE      | 019359603       | 4/6/01           | 1207942    | 6/15/05    | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 975784  | Replaceable Lens System                                                                                                                          | Issued  | Utility - EPPAT | SE      | 002504488       | 12/21/00         | 1114654    | 2/14/07    | MSA Auer GmbH | Michael Horn, Hartmut Kintzel                                                                                                 |
| 976129  | Method and Apparatus for Producing a Respiratory Filter                                                                                          | Issued  | Utility - EPPAT | SE      | 012500989       | 3/20/01          | 1149605    | 3/1/06     | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Krügerke                                                                                   |
| 976317  | Method For Manufacturing A Filter Body                                                                                                           | Issued  | Utility - EPPAT | SE      | 020900379       | 1/25/02          | 1247572    | 8/25/04    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehricht                                                                                     |
| 1105092 | Respiration Filter And Method For Producing The Same - Atemschutzfilter und Verfahren zu dessen Herstellung                                      | Issued  | Utility - EPPAT | SE      | 038155305       | 12/19/03         | 1513590    | 8/3/11     | MSA Auer GmbH | Andreas Haeuser, Keith Kruegel, Wilfried Hoffmann                                                                             |
| 842700  | Supporting Structure For A Respiratory Air Container Or Other Objects                                                                            | Issued  | Utility - NSPCT | US      | 10220096        | 4/6/01           | 6848120    | 2/1/05     | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                                                |
| 842706  | Bottle Support Of Compressed-Air Bottles                                                                                                         | Issued  | Utility - NSPCT | US      | 10276985        | 4/6/01           | 7331553    | 2/19/08    | MSA Auer GmbH | Peter V Kling, Carsten Leuschner                                                                                              |

| Active Patents - MSA Auer |                                                                                                                                                  |           |                 |         |                 |                  |             |            |               |                                                                                                 |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|---------|-----------------|------------------|-------------|------------|---------------|-------------------------------------------------------------------------------------------------|
| Dec 2, 2014               |                                                                                                                                                  |           |                 |         |                 |                  |             |            |               |                                                                                                 |
| FIP ID                    | TITLE                                                                                                                                            | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO. | APPLICATION DATE | PATENT NO.  | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                     |
| 842714                    | Respirator Mask With Supplementary Panels                                                                                                        | Issued    | Utility - NSPCT | US      | 10494023        | 9/20/02          | 7293560     | 11/13/07   | MSA Auer GmbH | Klaus D Dahrendorf, Michael Horn, Detlef Kielow, Wolfgang Weber                                 |
| 842715                    | Infrared Sensor With Explosion-Proof Protection For Gas Metering Appliances                                                                      | Issued    | Utility - NSPCT | US      | 10514144        | 3/27/03          | 7285782     | 10/23/07   | MSA Auer GmbH | Axel Schubert                                                                                   |
| 842717                    | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                             | Issued    | Utility - NSPCT | US      | 10501123        | 12/21/02         | 7322950     | 1/29/08    | MSA Auer GmbH | Peter V Kling                                                                                   |
| 842721                    | Filter And Blower Unit For Breathing Masks Or Bonnets                                                                                            | Issued    | Utility - NSPCT | US      | 10542689        | 12/19/03         | 7484509     | 2/3/09     | MSA Auer GmbH | Axel Schubert                                                                                   |
| 842847                    | Strap For A Full Respirator Mask                                                                                                                 | Issued    | Utility - NSPCT | US      | 10257810        | 10/10/01         | 6883519     | 4/26/05    | MSA Auer GmbH | John F Kuhn, Wilfried Hoffmann                                                                  |
| 842870                    | Support Frame For A Respiratory Air Container                                                                                                    | Issued    | Utility - NSPCT | US      | 10311792        | 8/28/03          | 7198186     | 4/3/07     | MSA Auer GmbH | Peter V Kling, Andreas Haeuser                                                                  |
| 842872                    | Circuit Arrangement For Startup Current Limitation For Electronic Modules Connected To A Module Carrier                                          | Issued    | Utility - NSPCT | US      | 10575493        | 9/8/04           | 7528506     | 5/5/09     | MSA Auer GmbH | Andreas Lemke                                                                                   |
| 905181                    | Blow Filter Device                                                                                                                               | Issued    | Utility - NSPCT | US      | 10592424        | 8/21/07          | 8118025     | 2/21/12    | MSA Auer GmbH | Frank Becker, Detlef Kielow, Martin Weber, Michael B Schulman                                   |
| 959506                    | Oxygen-Producing Respiratory Protection Device                                                                                                   | Issued    | Utility - NSPCT | US      | 11795701        | 1/19/06          | 8230854     | 7/31/12    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Koehricht                                         |
| 964221                    | Coupling Device For A Compressed Gas Cylinder                                                                                                    | Issued    | Utility - NSPCT | US      | 11596265        | 5/9/05           | 7757712     | 7/20/10    | MSA Auer GmbH | Peter Kadow, Peter V Kling, Thomas Kuba, Wolfgang Weber                                         |
| 964466                    | Respirator Mask For A Compressed Air Breathing Apparatus                                                                                         | Issued    | Utility - NSPCT | US      | 10497134        | 9/10/02          | 7673630     | 3/9/10     | MSA Auer GmbH | Peter V Kling                                                                                   |
| 964597                    | Circuit Arrangement Comprising A Multi-Wire Line For Supplying Current And Emitting Signals                                                      | Issued    | Utility - NSPCT | US      | 10566690        | 7/20/04          | 7456635     | 11/25/08   | MSA Auer GmbH | Petrus Akkerman, Andreas Lemke, Ingmar Henry Bogner                                             |
| 964636                    | Respiratory Half Mask                                                                                                                            | Issued    | Utility - NSPCT | US      | 12742704        | 10/1/08          | 8505536     | 8/13/13    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtko                                                    |
| 964666                    | BREATHING MASK                                                                                                                                   | Issued    | Utility - NSPCT | US      | 08716476        | 9/19/96          | 5669375     | 9/23/97    | MSA Auer GmbH | Klaus D Dahrendorf, JOACHIM Schlobohm, Wolfgang Drews, GUENTER Von Kopp, JOACHIM Saezel         |
| 965075                    | Electrochemical Sensor with Diffusion Labyrinth                                                                                                  | Issued    | Utility - NSPCT | US      | 12992148        | 5/7/09           | US8632665B2 | 1/21/14    | MSA Auer GmbH | Rolf Eckhardt, Martin Weber                                                                     |
| 975601                    | Connecting Part of a Breathing Mask                                                                                                              | Issued    | Utility - NSPCT | US      | 09746591        | 12/21/00         | 6561189     | 5/13/03    | MSA Auer GmbH | Klaus Schmidtko                                                                                 |
| 975790                    | Replaceable Lens System                                                                                                                          | Issued    | Utility - NSPCT | US      | 09749380        | 12/27/00         | 6394600     | 5/28/02    | MSA Auer GmbH | Michael Horn, Hartmut Kintzel                                                                   |
| 975828                    | Polymer-Bonded Material                                                                                                                          | Issued    | Utility - ORG   | US      | 09161357        | 9/25/98          | 6083439     | 7/4/00     | MSA Auer GmbH | Rudolf Nastke, Gerald Rafler, Helmut Rende, Gabriele Stadermann, Jannett Kohls, Dieter Luebkoll |
| 975831                    | Polymer-Bonded Material                                                                                                                          | Issued    | Utility - Div   | US      | 09428011        | 9/25/98          | 6429165     | 8/6/02     | MSA Auer GmbH | Rudolf Nastke, Gerald Rafler, Helmut Rende, Gabriele Stadermann, Jannett Kohls, Dieter Luebkoll |
| 976100                    | Method and Apparatus for Producing a Respiratory Filter                                                                                          | Issued    | Utility - NSPCT | US      | 09837499        | 4/18/01          | 7288223     | 10/30/07   | MSA Auer GmbH | Frank Becker, Martin Kurth, Thomas Kuegerke                                                     |
| 976237                    | Method For Manufacturing A Filter Body                                                                                                           | Issued    | Utility - NSPCT | US      | 10114623        | 4/2/02           | 6998080     | 2/14/06    | MSA Auer GmbH | Gabriele Stadermann, Karl-Heinz Koehricht                                                       |
| 976377                    | Holding Device For Connecting A Gas Mask To A Protective Helmet                                                                                  | Issued    | Utility - NSPCT | US      | 10550517        | 2/19/05          | 7866010     | 1/11/11    | MSA Auer GmbH | Fanguy Seve, Philippe Fitoussi, Wilfried Hoffmann                                               |
| 1015976                   | Electric Gas Sensor with Anionic Liquid Electrolyte System Including at Least One Monoalkylammonium, Dialkylammonium, or Trialkylammonium Cation | Issued    | Utility - NSPCT | US      | 13131391        | 11/25/09         | 8623189     | 1/7/14     | MSA Auer GmbH | Rolf Eckhardt, Ralf Werratz                                                                     |
| 1015995                   | Electrochemical Gas Sensors with Ionic Liquid Electrolyte Systems                                                                                | Published | Utility - NSPCT | US      | 13131324        | 11/25/09         |             |            | MSA Auer GmbH | Rolf Eckhardt, Martin Weber, Kathrin Toelle, Kathrin Keller                                     |
| 1016433                   | Electrochemical Solid-State Sensor for Chlorine                                                                                                  | Issued    | Utility - NSPCT | US      | 08648655        | 5/15/96          | 6074540     | 6/13/00    | MSA Auer GmbH | Alla Kroll, Dieter Mähl                                                                         |
| 1034034                   | Respirator Mask For A Compressed Air Breathing Apparatus                                                                                         | Issued    | Utility - CON   | US      | 12687522        | 1/14/10          | 8245712     | 8/21/12    | MSA Auer GmbH | Peter V Kling                                                                                   |

| Active Patents - MSA Auer |                                                                                                                                                                                                                                                                                  |           |                 |         |                  |                  |             |            |               |                                                                                                                               |
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|                           |                                                                                                                                                                                                                                                                                  |           |                 |         |                  |                  |             |            |               | Dec 2, 2014                                                                                                                   |
| FP ID                     | TITLE                                                                                                                                                                                                                                                                            | STATUS    | CATEGORY        | COUNTRY | APPLICATION NO.  | APPLICATION DATE | PATENT NO.  | GRANT DATE | REGISTRANT    | INVENTOR(S)                                                                                                                   |
| 1152304                   | Artificial Lung                                                                                                                                                                                                                                                                  | Published | Utility - NSPCT | US      | 13380576         | 6/25/10          |             |            | MSA Auer GmbH | Peter Kadow, Florian Lux                                                                                                      |
| 1342246                   | RADIO TRANSMISSION MODULES HAVING INTRINSIC SAFETY                                                                                                                                                                                                                               | Allowed   | Utility - NSPCT | US      | 13878110         | 10/5/11          |             |            | MSA Auer GmbH | Axel Schubert                                                                                                                 |
| 1567417                   | COUPLING DEVICE FOR A BREATHING APPARATUS                                                                                                                                                                                                                                        | Pending   | Utility - NSPCT | US      |                  | 2/8/13           |             |            | MSA Auer GmbH | Peter V Kling, Peter Kadow, Lukasz Niewiadomski                                                                               |
| 1567701                   | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                                                                                                                                           | Pending   | Utility - NSPCT | US      |                  | 10/25/12         |             |            | MSA Auer GmbH | Ralf Warratz                                                                                                                  |
| 1648501                   | Methods and Devices for Detection of the Concentration of at Least one Gaseous Target Substance and Use of a Device - Verfahren und Vorrichtung zur Detektion der Konzentration mindestens einer gasförmigen Zielsubstanz und Verwendung einer Vorrichtung - Using an NH3 Sensor | Pending   | Utility - NSPCT | US      |                  | 3/15/13          |             |            | MSA Auer GmbH | Ralf Warratz, Martin Weber                                                                                                    |
| 1353992                   | ELECTROCHEMICAL GAS SENSOR WITH AN IONIC LIQUID AS ELECTROLYTE FOR THE DETECTION OF AMMONIA AND AMINES                                                                                                                                                                           | Published | Utility - ORG   | WO      | PCTEP120711A1    | 10/25/12         |             |            | MSA Auer GmbH | Ralf Warratz                                                                                                                  |
| 1358220                   | Methods and Devices for Detection of the Concentration of at Least one Gaseous Target Substance and Use of a Device - Verfahren und Vorrichtung zur Detektion der Konzentration mindestens einer gasförmigen Zielsubstanz und Verwendung einer Vorrichtung - Using an NH3 Sensor | Pending   | Utility - ORG   | WO      | PCTEP20130554 63 | 3/15/13          |             |            | MSA Auer GmbH | Ralf Warratz, Martin Weber                                                                                                    |
| 1388603                   | COUPLING DEVICE FOR A BREATHING APPARATUS                                                                                                                                                                                                                                        | Published | Utility - ORG   | WO      | PCTEP13052490    | 2/8/13           |             |            | MSA Auer GmbH | Peter V Kling, Peter Kadow, Lukasz Niewiadomski                                                                               |
| 1388609                   | Atenschutzhaube - (Mask/Hood)                                                                                                                                                                                                                                                    | Published | Utility - ORG   | WO      | PCTEP20130552 92 | 3/14/13          |             |            | MSA Auer GmbH | Jürgen Boss, Peter Kadow                                                                                                      |
| 1468002                   | Special training device for AirElite 4h, based on Potassium superoxide                                                                                                                                                                                                           | Pending   | Utility - ORG   | WO      | PCTEP20140651 55 | 7/15/14          |             |            | MSA Auer GmbH | Keith Kruegel, Karl Heinz Feldner, Michael Freltag, Karl-Heinz Kochricht, Tino Grawe                                          |
| 1480734                   | HOLDING SYSTEM FOR A PERSON AND CARRIER PLATE FOR A RESPIRATORY PROTECTIVE DEVICE                                                                                                                                                                                                | Published | Utility - ORG   | WO      | PCTEP20130735 80 | 11/12/13         |             |            | MSA Auer GmbH | Markus Wind                                                                                                                   |
| 1516984                   | Sensor-Signalerfassung                                                                                                                                                                                                                                                           | Pending   | Utility - ORG   | WO      | PCTEP20140740 52 | 11/7/14          |             |            | MSA Auer GmbH | Andreas Lenke                                                                                                                 |
| 1519211                   | Simple Automatic Start Mechanism Sicherungsvorrichtung für ein Ventil                                                                                                                                                                                                            | Pending   | Utility - ORG   | WO      | PCTEP20140710 64 | 10/1/14          |             |            | MSA Auer GmbH | Peter Kadow                                                                                                                   |
| 900827                    | Compressed Air Supply System For A Compressed Air Respiratory Device                                                                                                                                                                                                             | Issued    | Utility - NSPCT | ZA      | 20041050         | 12/21/02         | ZA200404050 | 7/27/05    | MSA Auer GmbH | Peter V Kling                                                                                                                 |
| 900828                    | Breathing Apparatus With Oxygen Generating Chemical For Self Rescue                                                                                                                                                                                                              | Issued    | Utility - NSPCT | ZA      | ZA200600993      | 2/3/06           | ZA200600993 | 3/28/07    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                                                                                             |
| 900831                    | Oxygen-Producing Respiratory Protection Device                                                                                                                                                                                                                                   | Issued    | Utility - NSPCT | ZA      | ZA200705527      | 1/19/06          | ZA200705527 | 4/30/08    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner, Karl-Heinz Kochricht                                                                       |
| 964635                    | Respiratory Half Mask                                                                                                                                                                                                                                                            | Issued    | Utility - NSPCT | ZA      | 201003949        | 10/1/08          | 2010/03949  | 3/30/11    | MSA Auer GmbH | Detlef Kielow, Michael Horn, Klaus Schmidtke                                                                                  |
| 975416                    | Mask Body For A Respiratory Half-Mask                                                                                                                                                                                                                                            | Issued    | Utility - NSPCT | ZA      | 201003948        | 10/15/08         | 2010/03948  | 3/30/11    | MSA Auer GmbH | Detlef Kielow, Michael Horn                                                                                                   |
| 975741                    | Breathing Connector for an Oxygen Producing Breathing Apparatus                                                                                                                                                                                                                  | Issued    | Utility - NSPCT | ZA      | 200600995        | 2/3/06           | 200600995   | 3/28/07    | MSA Auer GmbH | Frank Krueger, Karl Heinz Feldner                                                                                             |
| 1073695                   | Polymer-Bonded Granular Adsorptive, Absorptive Chemisorptive, or catalytically Active Material                                                                                                                                                                                   | Issued    | Utility - NSPCT | ZA      | 988616           | 9/21/98          | 1998/08616  | 6/6/99     | MSA Auer GmbH | Rudolf Nastke, Gerald Raffler, Helmut Remde, Thomas Krügerke, Gabriele Stadermann, Jannett Kohls, Martin Kurth, Dieter Lulkaß |

## **Schedule C - Copyrights**

Rights in and to:

1. all material listed in Schedule D (e.g. copyrights, ancillary rights – such as rights in photographs – or rights of use and exploitation in and to the texts, photographs, drawings, CAD and CNC data contained therein);
2. the software listed in Schedule D, in particular, rights to the software embedded in the Products (as defined in Schedule D);
3. all materials relating to the marketing of the Products (as defined in Schedule D), including all bulletins and catalogues;
4. all materials relating to the use, care and maintenance of the Products, including all user instructions and manuals.

## **Schedule D - Know-How**

### **1. Information Comprised by Assigned Know-How**

(1) The Assigned Know-How in particular (but without limitation) comprises all information contained in any and all of the documents (whether in electronic form, such as in text files, electronic drawings, CAD or CNC data or in paper form or otherwise), set forth below:

- a) Research and product development plans and information, notebooks, data files and reports;
- b) Prototypes of Products (as defined below) or parts thereof;
- c) Engineering, construction, manufacturing and assembly drawings, including CAD and CNC data;
- d) Bills of materials/parts lists;
- e) Test guidelines and test reports;
- f) Maintenance schedules;
- g) Calculations and risk assessments;
- h) Manuals for manufacturing machines;
- i) Diagrams (such as circuit diagrams) and flow-charts;
- j) Invention records and sketches, and unpublished patent applications;
- k) Product quality and product improvement documents;
- l) List of suppliers;
- m) Documentation relating to the machines use in manufacturing Products, including machine setups;
- n) Software and databases used in manufacturing the Products, such as in particular all software and databases embedded in Products, insource code and in object code, including all earlier versions thereof in all development stages; and
- o) Documentation to the aforementioned software and databases,

any of the above if and to the extent they predominantly relate to Products, in particular their design, development or manufacture (including having manufactured).

- (2) The term "Products" as used above shall mean all products generally manufactured and commercialised by the Assignor or any of its affiliated companies at the Closing Date, as for example listed in Assignor's catalogues or on the website [www.msasafety.com](http://www.msasafety.com), and enhancements or improvements of such existing products, and new Products under development at the Assignor or any of its affiliates as at the Closing Date.
- (3) For the avoidance of doubt, any information which Assignor is not entitled to disclose and/or transfer, convey, assign or deliver to third parties, e.g. due to confidentiality restrictions to third parties do not qualify as Assigned Know-How.

**2. Physical and tangible material to be transferred according to section 1.4, third sentence of the APA.**

The physical and tangible material set forth below is transferred according to Section 1.4, third sentence of the APA to Purchaser at the Closing Date (as defined in the APA), i.e. by way of Seller retaining the material as a possession mediator (*Besitzmittler*) at the Closing Date for the Purchaser:

- a) All documents set forth under 1. of this Schedule D which are, at the Closing Date (as defined in the APA) present in paper form in the premises of the Assignor (i.e. at Thiemannstrasse 1, 12059 Berlin, Deutschland).
- b) All prototypes of Products which are, at the Closing Date (as defined in the APA) present in the premises of the Assignor (i.e. at Thiemannstrasse 1, 12059 Berlin, Deutschland).