

8069081



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

October 30, 2020

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 16/679,596
FILING DATE: *November 11, 2019*

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US16/679,596



Certified by

Andres Ibarra

Under Secretary of Commerce
for Intellectual Property
and Director of the United States
Patent and Trademark Office

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	
Filing Date	
First Named Inventor	Patrick E. Eddy
Title	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID
Art Unit	
Examiner Name	
Attorney Docket Number	PAR022 P343

SIGNATURE of Applicant or Patent Practitioner

Signature	/Jason L. Budd/	Date (Optional)	November 11, 2019
Name	Jason L. Budd	Registration Number	57937
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Parasol Medical, LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.



*Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number

Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)



I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

000277

OR



I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:



The address associated with the above-mentioned Customer Number

OR



The address associated with Customer Number:

OR



Firm or
Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Parasol Medical, LLC



Inventor or Joint Inventor (title not required below)



Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)



Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)



Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

Name

Patrick E. Eddy

Title

Partner, Parasol Medical, LLC

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.



Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**COMBINED ASSIGNMENT AND DECLARATION FOR UTILITY OR
DESIGN APPLICATION USING AN APPLICATION DATA SHEET**

As a below named inventor, I hereby declare:

I believe I am the original inventor or an original joint inventor of a claimed invention for which a patent is sought on the invention entitled "SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID," the application of which is attached hereto.

The above-identified application was made or authorized to be made by me.

I acknowledge the duty to disclose to the United States Patent and Trademark Office (the Office), all information which is known by me to be material to patentability as defined in Title 37, Code of Federal Regulations (C.F.R.), Section 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Parasol Medical, LLC, a limited liability company of the State of Illinois, having a place of business at 1602 Barclay Blvd., Buffalo Grove, IL 60089 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title, and interest in and to said invention and in and to any patent that may be granted therefor in the United States and in any and all foreign countries.

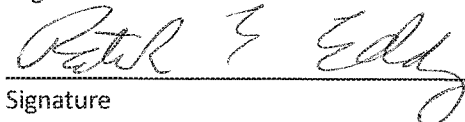
In consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable considerations, I hereby sell, assign and transfer to the Assignee the full and exclusive right, title, and interest to the invention in the United States and in all foreign countries and the entire right, title and interest in and to any and all patents which may be granted therefor in the United States and in any and all foreign countries and in and to any and all divisions, reissues, continuations, continuation-in-part, and extensions thereof including the full right to claim for any such applications the benefits of the International Convention, and including the right to obtain a reasonable royalty pursuant to 35 U.S.C. § 154(d) upon publication of any such United States applications.

I hereby authorize and request the Patent Office Officials in the United States and in any and all foreign countries to issue any and all of such patents, when granted, to the Assignee as the owner of the entire right, title and interest in and to the same, for the sole use and benefit of the Assignee, its successors and assigns.

I agree to communicate to the Assignee or its representatives any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, continuation-in-part, substitution, renewal, and reissue applications, execute all necessary assignment papers to cause any and all of the patents to be issued to the Assignee, make all rightful oaths and generally do everything possible to aid the Assignee, its successors and assigns, to obtain and enforce proper protection for the invention in the United States and in any and all foreign countries.

Patrick E. Eddy

Legal Name of Inventor



Signature

10/23/19

Date

**COMBINED ASSIGNMENT AND DECLARATION FOR UTILITY OR
DESIGN APPLICATION USING AN APPLICATION DATA SHEET**

As a below named inventor, I hereby declare:

I believe I am the original inventor or an original joint inventor of a claimed invention for which a patent is sought on the invention entitled "SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID," the application of which is attached hereto.

The above-identified application was made or authorized to be made by me.

I acknowledge the duty to disclose to the United States Patent and Trademark Office (the Office), all information which is known by me to be material to patentability as defined in Title 37, Code of Federal Regulations (C.F.R.), Section 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Parasol Medical, LLC, a limited liability company of the State of Illinois, having a place of business at 1602 Barclay Blvd., Buffalo Grove, IL 60089 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title, and interest in and to said invention and in and to any patent that may be granted therefor in the United States and in any and all foreign countries.

In consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable considerations, I hereby sell, assign and transfer to the Assignee the full and exclusive right, title, and interest to the invention in the United States and in all foreign countries and the entire right, title and interest in and to any and all patents which may be granted therefor in the United States and in any and all foreign countries and in and to any and all divisions, reissues, continuations, continuation-in-part, and extensions thereof including the full right to claim for any such applications the benefits of the International Convention, and including the right to obtain a reasonable royalty pursuant to 35 U.S.C. § 154(d) upon publication of any such United States applications.

I hereby authorize and request the Patent Office Officials in the United States and in any and all foreign countries to issue any and all of such patents, when granted, to the Assignee as the owner of the entire right, title and interest in and to the same, for the sole use and benefit of the Assignee, its successors and assigns.

I agree to communicate to the Assignee or its representatives any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, continuation-in-part, substitution, renewal, and reissue applications, execute all necessary assignment papers to cause any and all of the patents to be issued to the Assignee, make all rightful oaths and generally do everything possible to aid the Assignee, its successors and assigns, to obtain and enforce proper protection for the invention in the United States and in any and all foreign countries.

Cassandra Ann Eddy

Legal Name of Inventor

Cassandra Eddy

Signature

11/6/19

Date

Electronic Acknowledgement Receipt

EFS ID:	37711769
Application Number:	16679596
International Application Number:	
Confirmation Number:	8009
Title of Invention:	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID
First Named Inventor/Applicant Name:	Patrick E. Eddy
Customer Number:	277
Filer:	Jason Budd/Sharla Waller
Filer Authorized By:	Jason Budd
Attorney Docket Number:	PAR022 P343
Receipt Date:	11-NOV-2019
Filing Date:	
Time Stamp:	13:11:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$785
RAM confirmation Number	E2019AAD12215029
Deposit Account	162463
Authorized User	Sharla Waller

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	20191111_PAR022_P343_ADS.PDF	1255933	no	8
			4b845bc69d0d1fa35edb64ad7873247de7980308		
Warnings:					
Information:					
2		20191111_PAR022_P343_Patent_Application.PDF	116129	yes	9
			ecc577a73faa75f7b4ea1a38057fbf415b8a3ab8		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	5	
	Claims		6	8	
	Abstract		9	9	
Warnings:					
Information:					
3	Power of Attorney	20191111_PAR022_P343_POA.pdf	679664	no	2
			2854fdbf1ee6feebc06e3560dc0edf77dc1ccada		
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	20191111_PAR022_P343_Authorization.pdf	63905	no	1
			b83d1257f1afcc1693857e7b7cfa1632ba4347b9		
Warnings:					
Information:					
5	Oath or Declaration filed	20191111_PAR022_P343_Declarations.PDF	1052919	no	2
			516bb6cbc2b31431fae3a015efd405a651c2f837		

Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	35238	no	2
			df6ba502e264d74f102664edf6ed881205956d35		
Warnings:					
Information:					
Total Files Size (in bytes):			3203788		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Patrick	E.	Eddy			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Allendale	State/Province	MI	Country of Residence	US	

Mailing Address of Inventor:

Address 1	11491 78th Avenue					
Address 2						
City	Allendale	State/Province	MI			
Postal Code	49401	Country	US			

Inventor	2				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Cassandra	Ann	Eddy			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Allendale	State/Province	MI	Country of Residence	US	

Mailing Address of Inventor:

Address 1	11491 78th Avenue					
Address 2						
City	Allendale	State/Province	MI			
Postal Code	49401	Country	US			

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.

Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		

☐ An Address is being provided for the correspondence information of this application.

Customer Number	000277		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		
Attorney Docket Number	PAR022 P343	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	0	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	000277		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1		Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
		Clear	
☒ Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	Parasol Medical, LLC		
Mailing Address Information For Applicant:			
Address 1	1602 Barclay Blvd.		
Address 2			
City	Buffalo Grove	State/Province	IL
Country	US	Postal Code	60089
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		

Assignee	1		
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
Remove			
If the Assignee or Non-Applicant Assignee is an Organization check here. ☒			
Organization Name	Parasol Medical, LLC		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	1602 Barclay Blvd.		
Address 2			
City	Buffalo Grove	State/Province	IL
Country ⁱ	US	Postal Code	60089
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add			

Signature:[Remove](#)

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

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Signature	/Jason Budd/		Date (YYYY-MM-DD)	2019-11-11
First Name	Jason	Last Name	Budd	Registration Number
				57937
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	PAR022 P343
		Application Number	
Title of Invention	SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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SANITIZING AND ANTIMICROBIAL SOLUTION WITH BOTH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID

BACKGROUND OF THE DISCLOSURE

[0001] The electrolysis of an aqueous solution of sodium chloride (sometimes referred to as a brine solution) generates hypochlorous acid (HOCl). More specifically, an electrolytic cell typically with a membrane permeable to sodium and chloride ions separates an anode from a cathode. At the anode, an acidic solution of hypochlorous acid, hydrochloric acid (HCl), and the hypochlorite ion (ClO^-), is produced, as is oxygen (O_2) and chlorine (Cl_2) gases. The chlorine components are in equilibrium, and the dominant chemical is a function of pH, with hypochlorous acid being dominant at pH values between 2 and 7. At the cathode, a basic solution of sodium hydroxide (NaOH) is produced, as well as hydrogen (H_2) gas. The acidic solution generated at the anode is sometimes referred to as the “anolyte” or “acidic electrolyzed water.” The basic solution generated at the cathode is sometimes referred to as the “catholyte” or “basic electrolyzed water.” The combination of the two is sometimes referred to as “neutral electrolyzed water.”

[0002] Hypochlorous acid has been used as a sanitizing agent, disinfecting agent, and an antimicrobial agent in various applications. Example applications for hypochlorous acid include disinfecting food processing surfaces and sanitizing medical equipment in hospitals. Hypochlorous acid very rapidly kills microorganisms by irreversibly reacting with membrane enzymes and structural proteins. The “catholyte,” containing sodium hydroxide, has been utilized as a cleaning agent.

[0003] However, the reactivity of hypochlorous acid poses a problem in that hypochlorous acid cannot be a persistent or prophylactic antimicrobial agent. Similarly, the “anolyte” has a limited shelf-life with concentration of hypochlorous acid decreasing quickly as a function of time.

BRIEF SUMMARY OF THE DISCLOSURE

[0004] The present disclosure solves that problem by combining a silane quaternary ammonium component with the hypochlorous acid. The silane quaternary ammonium component imparts a long-lasting antimicrobial component to the solution containing hypochlorous acid. Solutions that contain a silane quaternary ammonium component, when applied over a surface, result in the bonding of the silane quaternary ammonium component to the surface. The silane

quaternary ammonium component does not expire via reaction in the same manner as hypochlorous acid does. Therefore, the silane quaternary ammonium component provides long-lasting antimicrobial efficacy, even if the hypochlorous acid has already reacted and thus expired, or if the hypochlorous acid in the solution has decreased in concentration. In a sense, the silane quaternary ammonium component provides a back-up antimicrobial function, in the event that the hypochlorous acid has reacted or has reduced concentration in the solution.

[0005] According to a first aspect of the present disclosure, a disinfecting and antimicrobial solution comprises: hypochlorous acid; silane quaternary ammonium ion or salt thereof; and water. In embodiments, the hypochlorous acid exists in the solution at a concentration of 0.1 to 1000 ppm. In embodiments, the hypochlorous acid exists in the solution at a concentration of 0.1 to 200 ppm. In embodiments, the hypochlorous acid exists in the solution at a concentration of 200 to 1000 ppm.

[0006] In embodiments, the silane quaternary ammonium ion or salt thereof is one or more of: 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion, 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride, 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride. In embodiments, the silane quaternary ammonium ion or salt thereof is 0.1 to 10 percent by weight of the solution. In embodiments, the silane quaternary ammonium ion or salt thereof is 0.75 to 5 percent by weight of the solution. In embodiments, the silane quaternary ammonium ion or salt thereof is 1.9 to 2.1 percent by weight of the solution. In embodiments, the disinfecting and antimicrobial solution further comprises isopropyl alcohol.

[0007] In embodiments, the disinfecting and antimicrobial solution further comprises: an anolyte product of electrolysis of an aqueous solution of sodium chloride, and the anolyte product comprises the hypochlorous acid. In embodiments, the disinfecting and antimicrobial solution further comprises: a catholyte product of the electrolysis of the aqueous solution of sodium chloride that produced the anolyte product, and the catholyte product comprises sodium hydroxide.

[0008] According to a second aspect of the present disclosure, a disinfecting and antimicrobial solution comprises: 0.1 to 1000 ppm hypochlorous acid; 0.1 to 10 percent by weight silane

quaternary ammonium ion or salt thereof; and water. In embodiments, the silane quaternary ammonium ion or salt thereof is one or more of: 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion, 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride, 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride. In embodiments, the disinfecting and antimicrobial solution further comprises isopropyl alcohol.

[0009] According to a third aspect of the present disclosure, an antimicrobial solution comprises: sodium hydroxide; silane quaternary ammonium ion or salt thereof; and water. In embodiments, the silane quaternary ammonium ion or salt thereof is one or more of: 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion, 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride, 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride. In embodiments, the silane quaternary ammonium ion or salt thereof is 0.1 to 10 percent by weight of the solution. In embodiments, the antimicrobial solution further comprises isopropyl alcohol. In embodiments, the antimicrobial solution further comprises: a catholyte product of the electrolysis of the aqueous solution of sodium chloride, the catholyte product comprising the sodium hydroxide. In embodiments, the antimicrobial solution further comprises: an anolyte product of the electrolysis of the aqueous solution of sodium chloride, the anolyte product comprising hypochlorous acid.

[0010] These and other features, advantages, and objects of the present disclosure will be further understood and appreciated by those skilled in the art by reference to the following specification, claims, and appended drawings.

DETAILED DESCRIPTION

[0011] For purposes of description herein, it is to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification are simply exemplary embodiments of the inventive concepts defined in the appended claims. Hence, physical characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.

- [0012]** Described herein is a disinfecting and antimicrobial solution. The disinfecting and antimicrobial solution includes hypochlorous acid, silane quaternary ammonium ion or salt thereof, and water.
- [0013]** In embodiments, the hypochlorous acid is the product of electrolysis of an aqueous solution of sodium chloride. In embodiments, the hypochlorous acid exists in the solution at a concentration of 0.1 to 1000 ppm, such as a concentration of 0.1 to 200 ppm, or a concentration of 200 to 1000 ppm.
- [0014]** In embodiments, the silane quaternary ammonium ion or salt thereof is one or more of:
 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion,
 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride,
 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and
 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride. In embodiments, the silane quaternary ammonium ion or salt thereof is 0.1 to 10 percent by weight of the solution, such as 0.75 to 5 percent by weight of the solution, such as 1.9 to 2.1 percent by weight of the solution.
- [0015]** In embodiments, the disinfecting and antimicrobial solution further includes isopropyl alcohol.
- [0016]** In a particular embodiment, the disinfecting and antimicrobial solution comprises 0.1 to 1000 ppm hypochlorous acid, 0.1 to 10 percent by weight silane quaternary ammonium ion or salt thereof, and water. The solution can further include isopropyl alcohol.
- [0017]** In embodiments, the hypochlorous acid is a component of the anolyte of the electrolysis of an aqueous solution of sodium chloride. In such embodiments, the anolyte containing the hypochlorous acid is combined with a solution containing the silane quaternary ammonium ion or salt thereof. In a variation, the catholyte product of the electrolysis of the aqueous solution of sodium chloride is also added to the disinfecting and antimicrobial solution, thus supplying the aqueous solution with sodium hydroxide.
- [0018]** The addition of the silane quaternary ammonium ion or salt thereof provides long lasting antimicrobial activity that survives after the expiration of hypochlorous acid due to reaction or otherwise. The silane group of the silane quaternary ammonium ion bonds to the surface to which it is applied. When a microbial cell contacts the silane quaternary ammonium ion, it is thought that several mechanisms cause the death of the microbial cell – (1) the quaternary group

causes an ionic imbalance in the cell; or (2) the long alkyl chain penetrates into and ruptures the cell. Unlike hypochlorous acid, the silane quaternary ammonium ion destroys the microbe cell without consuming the silane quaternary ammonium ion. The silane quaternary ammonium ion is free to destroy more microbial cells. Therefore, even after the hypochlorous acid has reacted, the silane quaternary ammonium ion remains bonded to the surface to which it was applied to continue to provide antimicrobial properties.

[0019] In another aspect of this disclosure, an antimicrobial solution comprises sodium hydroxide, silane quaternary ammonium ion or salt thereof, and water. The silane quaternary ammonium ion or salt thereof is one or more of: 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion, 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride, 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride. The silane quaternary ammonium ion or salt thereof is 0.1 to 10 percent by weight of the solution.

[0020] In embodiments, the sodium hydroxide is a component of a catholyte product of the electrolysis of the aqueous solution of sodium chloride, and the catholyte product is combined with the silane quaternary ammonium ion or salt thereof. In embodiments, the antimicrobial solution further includes an anolyte product of the electrolysis of the aqueous solution of sodium chloride, and the anolyte product comprises hypochlorous acid.

[0021] It is to be understood that variations and modifications can be made on the aforementioned structure without departing from the concepts of the present disclosure, and further it is to be understood that such concepts are intended to be covered by the following claims unless these claims by their language expressly state otherwise.

CLAIM(S)

What is claimed is:

1. A disinfecting and antimicrobial solution comprising:
hypochlorous acid;
silane quaternary ammonium ion or salt thereof; and
water.
2. The disinfecting and antimicrobial solution of claim 1,
the hypochlorous acid exists in the solution at a concentration of 0.1 to 1000 ppm.
3. The disinfecting and antimicrobial solution of claim 1,
the hypochlorous acid exists in the solution at a concentration of 0.1 to 200 ppm.
4. The disinfecting and antimicrobial solution of claim 1,
the hypochlorous acid exists in the solution at a concentration of 200 to 1000 ppm.
5. The disinfecting and antimicrobial solution of claim 1,
the silane quaternary ammonium ion or salt thereof is one or more of:
3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion,
3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride,
3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and
3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride.
6. The disinfecting and antimicrobial solution of claim 1,
the silane quaternary ammonium ion or salt thereof is 0.1 to 10 percent by weight of the
solution.

7. The disinfecting and antimicrobial solution of claim 1,
the silane quaternary ammonium ion or salt thereof is 0.75 to 5 percent by weight of the solution.
8. The disinfecting and antimicrobial solution of claim 1,
the silane quaternary ammonium ion or salt thereof is 1.9 to 2.1 percent by weight of the solution.
9. The disinfecting and antimicrobial solution of claim 1 further comprising:
isopropyl alcohol.
10. The disinfecting and antimicrobial solution of claim 1 further comprising:
an anolyte product of electrolysis of an aqueous solution of sodium chloride, the anolyte product comprising the hypochlorous acid.
11. The disinfecting and antimicrobial solution of claim 10 further comprising:
a catholyte product of the electrolysis of the aqueous solution of sodium chloride that produced the anolyte product, the catholyte product comprising sodium hydroxide.
12. A disinfecting and antimicrobial solution comprising:
0.1 to 1000 ppm hypochlorous acid;
0.1 to 10 percent by weight silane quaternary ammonium ion or salt thereof; and
water.
13. The disinfecting and antimicrobial solution of claim 12,
the silane quaternary ammonium ion or salt thereof is one or more of:
3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion,
3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride,
3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and
3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride.

14. The disinfecting and antimicrobial solution of claim 12 further comprising:
isopropyl alcohol.
15. An antimicrobial solution comprising:
sodium hydroxide;
silane quaternary ammonium ion or salt thereof; and
water.
16. The antimicrobial solution of claim 14,
the silane quaternary ammonium ion or salt thereof is one or more of:
3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion,
3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride,
3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and
3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride.
17. The antimicrobial solution of claim 14,
the silane quaternary ammonium ion or salt thereof is 0.1 to 10 percent by weight of the
solution.
18. The antimicrobial solution of claim 14 further comprising:
isopropyl alcohol.
19. The antimicrobial solution of claim 14 further comprising:
a catholyte product of electrolysis of an aqueous solution of sodium chloride, the
catholyte product comprising the sodium hydroxide.
20. The antimicrobial solution of claim 19 further comprising:
an anolyte product of the electrolysis of the aqueous solution of sodium chloride, the
anolyte product comprising hypochlorous acid.

ABSTRACT

A disinfecting and antimicrobial solution comprises: hypochlorous acid; silane quaternary ammonium ion or salt thereof; and water. The hypochlorous acid can exist in the solution at a concentration of 0.1 to 1000 ppm. The silane quaternary ammonium ion or salt thereof can be one or more of: 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium ion, 3-(trimethoxysilyl)propyldimethyloctadecyl ammonium chloride, 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium ion, and 3-(trihydroxysilyl)propyldimethyloctadecyl ammonium chloride. The silane quaternary ammonium ion or salt thereof can be 0.1 to 10 percent by weight of the solution. The disinfecting and antimicrobial solution can further comprise isopropyl alcohol. The disinfecting and antimicrobial solution can further comprise an anolyte product of electrolysis of an aqueous solution of sodium chloride, and the anolyte product comprises the hypochlorous acid of the disinfecting and antimicrobial solution.

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5813350

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
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CASSANDRA ANN EDDY	11/06/2019
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Postal Code:	60089
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	16679596
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NAME OF SUBMITTER:	JASON L. BUDD
SIGNATURE:	/JASON L. BUDD/
DATE SIGNED:	11/11/2019
This document serves as an Oath/Declaration (37 CFR 1.63).	
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source=20191111_PAR022_P343_Assignments#page1.tif	
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**COMBINED ASSIGNMENT AND DECLARATION FOR UTILITY OR
DESIGN APPLICATION USING AN APPLICATION DATA SHEET**

As a below named inventor, I hereby declare:

I believe I am the original inventor or an original joint inventor of a claimed invention for which a patent is sought on the invention entitled "SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID," the application of which is attached hereto.

The above-identified application was made or authorized to be made by me.

I acknowledge the duty to disclose to the United States Patent and Trademark Office (the Office), all information which is known by me to be material to patentability as defined in Title 37, Code of Federal Regulations (C.F.R.), Section 1.56.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

Parasol Medical, LLC, a limited liability company of the State of Illinois, having a place of business at 1602 Barclay Blvd., Buffalo Grove, IL 60089 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title, and interest in and to said invention and in and to any patent that may be granted therefor in the United States and in any and all foreign countries.

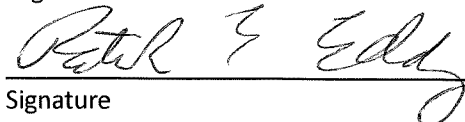
In consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable considerations, I hereby sell, assign and transfer to the Assignee the full and exclusive right, title, and interest to the invention in the United States and in all foreign countries and the entire right, title and interest in and to any and all patents which may be granted therefor in the United States and in any and all foreign countries and in and to any and all divisions, reissues, continuations, continuation-in-part, and extensions thereof including the full right to claim for any such applications the benefits of the International Convention, and including the right to obtain a reasonable royalty pursuant to 35 U.S.C. § 154(d) upon publication of any such United States applications.

I hereby authorize and request the Patent Office Officials in the United States and in any and all foreign countries to issue any and all of such patents, when granted, to the Assignee as the owner of the entire right, title and interest in and to the same, for the sole use and benefit of the Assignee, its successors and assigns.

I agree to communicate to the Assignee or its representatives any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, continuation-in-part, substitution, renewal, and reissue applications, execute all necessary assignment papers to cause any and all of the patents to be issued to the Assignee, make all rightful oaths and generally do everything possible to aid the Assignee, its successors and assigns, to obtain and enforce proper protection for the invention in the United States and in any and all foreign countries.

Patrick E. Eddy

Legal Name of Inventor



Signature

10/23/19

Date

**COMBINED ASSIGNMENT AND DECLARATION FOR UTILITY OR
DESIGN APPLICATION USING AN APPLICATION DATA SHEET**

As a below named inventor, I hereby declare:

I believe I am the original inventor or an original joint inventor of a claimed invention for which a patent is sought on the invention entitled "SANITIZING AND ANTIMICROBIAL SOLUTION WITH SILANE QUATERNARY AMMONIUM WITH HYPOCHLOROUS ACID," the application of which is attached hereto.

The above-identified application was made or authorized to be made by me.

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Parasol Medical, LLC, a limited liability company of the State of Illinois, having a place of business at 1602 Barclay Blvd., Buffalo Grove, IL 60089 (hereinafter referred to as Assignee), is desirous of acquiring the entire right, title, and interest in and to said invention and in and to any patent that may be granted therefor in the United States and in any and all foreign countries.

In consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable considerations, I hereby sell, assign and transfer to the Assignee the full and exclusive right, title, and interest to the invention in the United States and in all foreign countries and the entire right, title and interest in and to any and all patents which may be granted therefor in the United States and in any and all foreign countries and in and to any and all divisions, reissues, continuations, continuation-in-part, and extensions thereof including the full right to claim for any such applications the benefits of the International Convention, and including the right to obtain a reasonable royalty pursuant to 35 U.S.C. § 154(d) upon publication of any such United States applications.

I hereby authorize and request the Patent Office Officials in the United States and in any and all foreign countries to issue any and all of such patents, when granted, to the Assignee as the owner of the entire right, title and interest in and to the same, for the sole use and benefit of the Assignee, its successors and assigns.

I agree to communicate to the Assignee or its representatives any facts known to me respecting the invention, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, continuation-in-part, substitution, renewal, and reissue applications, execute all necessary assignment papers to cause any and all of the patents to be issued to the Assignee, make all rightful oaths and generally do everything possible to aid the Assignee, its successors and assigns, to obtain and enforce proper protection for the invention in the United States and in any and all foreign countries.

Cassandra Ann Eddy

Legal Name of Inventor

Cassandra Eddy

Signature

11/16/19

Date