



New connection on: : 09-06-2018 : 02:13:32 - Last disconnection on: : 09-06-2018 : 00:31:52

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 5] ..fi EPODOC



Database: EPODOC

[EPODOC: SS 5] **ANTIMICROBIAL AND compound AND system AND capture AND recycle AND (cm OR inch OR mm)**

Results in EPODOC 0

[SS 6] **ANTIMICROBIAL AND compound AND system AND capture AND recycle**

Results in EPODOC 16

[SS 7] ..v

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PN - [PH12017500681](#) A1 20171009

PR - US201414510385
20141009; WO2015US53398
20151001

AP - PH20171500681 20170410

DT - I

CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[B01D33/76](#) ; [B01D24/14](#) ;
[B01D24/40](#) ; [C02F1/001](#) ;
[C02F1/006](#) ; [C02F1/283](#)

CCA - [C02F2103/22](#) ; [C02F2103/32](#) ;
[C02F2303/04](#)

PA - SAFE FOODS CORP [US]

TI - **ANTIMICROBIAL
APPLICATION SYSTEM
WITH RECYCLE AND CAPTURE**

AB - A **capture** unit for use with
an **antimicrobial** application unit
may include an upstream filter and
a downstream filter. The
upstream filter may be
positioned to receive effluent
from the application unit and to
filter solid components from the
effluent. The resultant upstream
effluent filtrate may then be
passed downstream to the
downstream filter. The
downstream filter may be used
to filter an **antimicrobial**
component from the upstream
effluent filtrate and the resultant
downstream effluent filtrate may
be suitable for disposal as
wastewater discharge.
The **antimicrobial** is preferably a
quaternary
ammonium **compound**, is more
preferably an alkylpyridinium
chloride, and is most preferably
cetylpyridinium chloride.

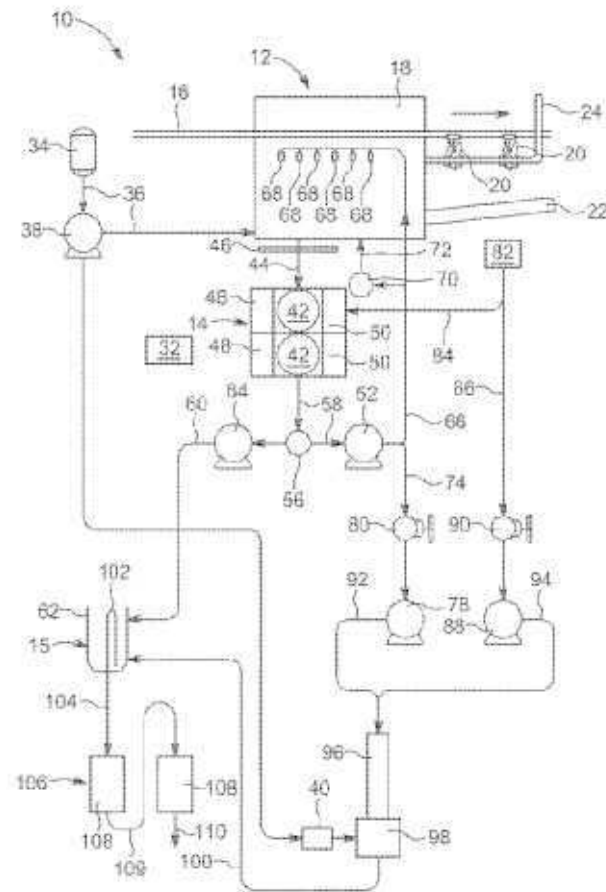


FIG. 1

PN - [CN106795011](#) A 20170531

PR - US201414510385
20141009; WO2015US53398
20151001

AP - CN2015855022 20151001

DT - I

CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[B01D33/76](#) ; [B01D24/14](#) ;
[B01D24/40](#) ; [C02F1/001](#) ;
[C02F1/006](#) ; [C02F1/283](#)

CCA - [C02F2103/22](#) ; [C02F2103/32](#) ;
[C02F2303/04](#)

PA - SAFE FOODS CORP

TI - **Antimicrobial** application system
with **recycle** and **capture**

AB - A **capture** unit for use with
an **antimicrobial** application unit
may include an upstream filter and a downstream filter. The
upstream filter may be
positioned to receive effluent
from the application unit and to
filter solid components from the
effluent. The resultant upstream
effluent filtrate may then be
passed downstream to the
downstream filter. The
downstream filter may be used
to filter an **antimicrobial**
component from the upstream
effluent filtrate and the resultant
downstream effluent filtrate may
be suitable for disposal as
wastewater discharge.
The **antimicrobial** is preferably a
quaternary
ammonium **compound**, is more
preferably an alkylpyridinium
chloride, and is most preferably
cetylpyridinium chloride.

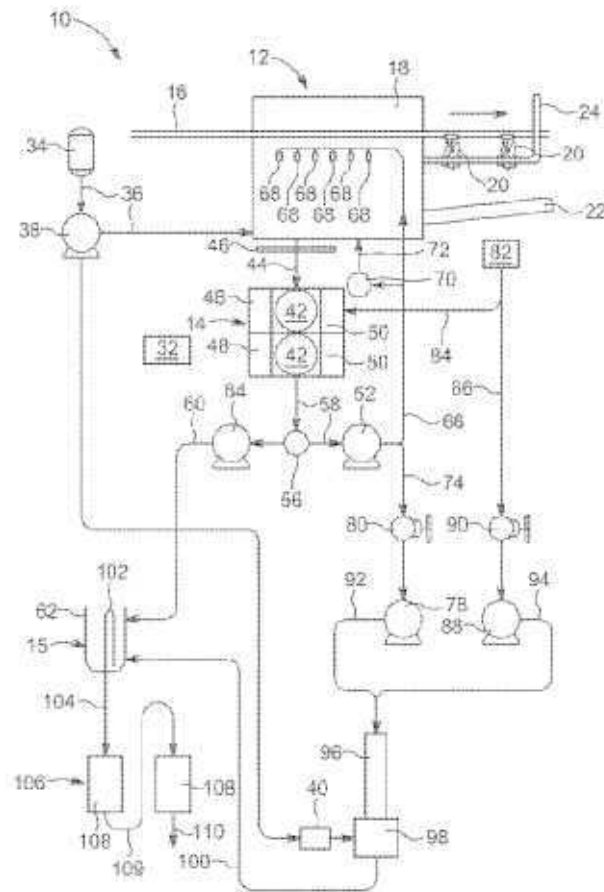


FIG. 1

PN - [CA2963638](#) A1 20160414

PR - US201414510385
20141009; WO2015US53398
20151001

AP - CA20152963638 20151001

DT - I

CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[B01D33/76](#) ; [B01D24/14](#) ;
[B01D24/40](#) ; [C02F1/001](#) ;
[C02F1/006](#) ; [C02F1/283](#)

CCA - [C02F2103/22](#) ; [C02F2103/32](#) ;
[C02F2303/04](#)

PA - SAFE FOODS CORP [US]

TI - **ANTIMICROBIAL
APPLICATION SYSTEM
WITH RECYCLE AND CAPTURE**

AB - A **capture** unit for use with
an **antimicrobial** application unit
may include an upstream filter and
a downstream filter. The
upstream filter may be
positioned to receive effluent
from the application unit and to
filter solid components from the
effluent. The resultant upstream
effluent filtrate may then be
passed downstream to the
downstream filter. The
downstream filter may be used
to filter an **antimicrobial**
component from the upstream
effluent filtrate and the resultant
downstream effluent filtrate may
be suitable for disposal as
wastewater discharge.
The **antimicrobial** is preferably a
quaternary
ammonium **compound**, is more
preferably an alkylpyridinium
chloride, and is most preferably
cetylpyridinium chloride.

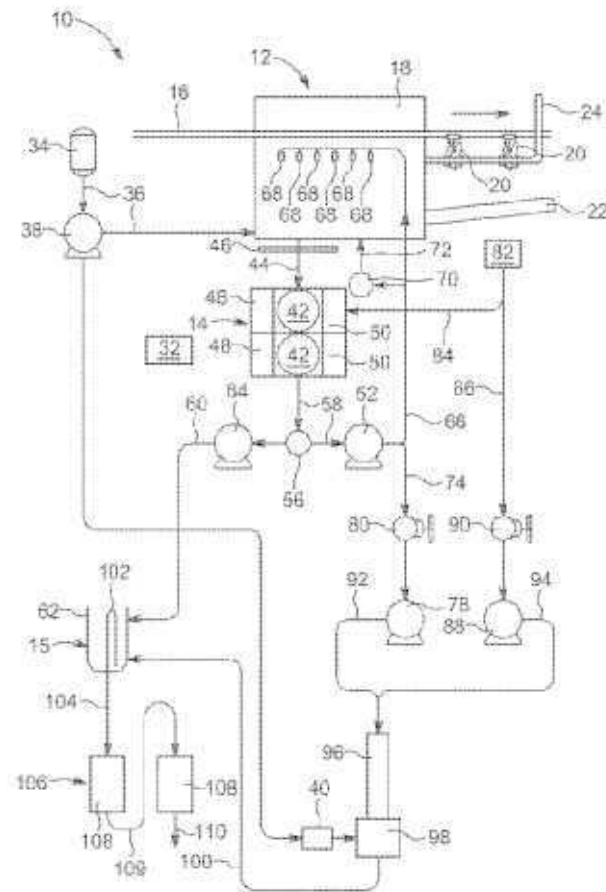


FIG. 1

PN - [AU2015328488](#) A1 20170420

PR - US201414510385
20141009; WO2015US53398
20151001

AP - AU20150328488 20151001

DT - I

CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[B01D33/76](#) ; [B01D24/14](#) ;
[B01D24/40](#) ; [C02F1/001](#) ;
[C02F1/006](#) ; [C02F1/283](#)

CCA - [C02F2103/22](#) ; [C02F2103/32](#) ;
[C02F2303/04](#)

PA - SAFE FOODS CORP

TI - **Antimicrobial application system
with recycle and capture**

AB - A **capture** unit for use with
an **antimicrobial** application unit
may include an upstream filter and a downstream filter. The
upstream filter may be
positioned to receive effluent
from the application unit and to
filter solid components from the
effluent. The resultant upstream
effluent filtrate may then be
passed downstream to the
downstream filter. The
downstream filter may be used
to filter an **antimicrobial**
component from the upstream
effluent filtrate and the resultant
downstream effluent filtrate may
be suitable for disposal as
wastewater discharge.
The **antimicrobial** is preferably a
quaternary
ammonium **compound**, is more
preferably an alkylpyridinium
chloride, and is most preferably
cetylpyridinium chloride.

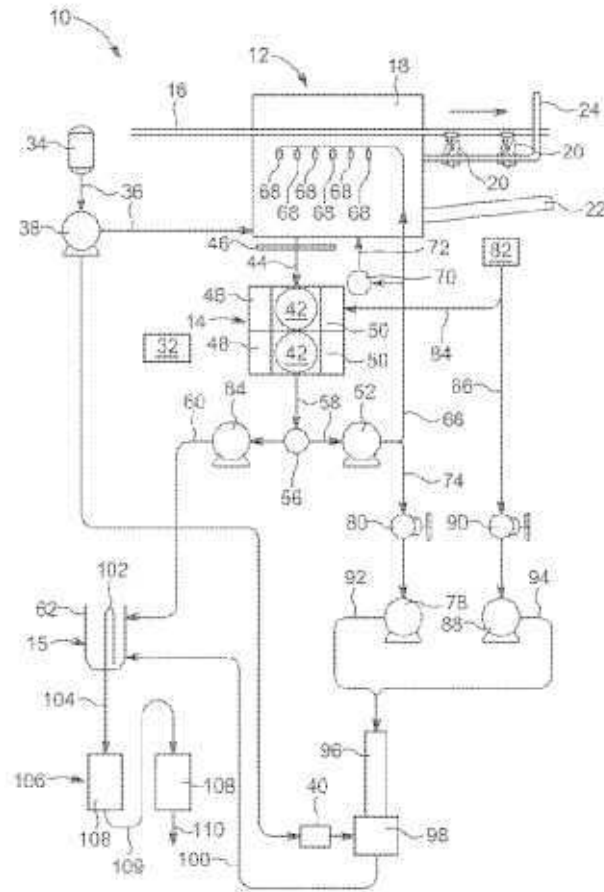


FIG. 1

PN - [US2016193549](#) A1 20160707

PR - US201414510385
20141009; US20080535030
20081010; WO2003US35933
20031112; US20020425679P
20021112; US20050535030
20050511

AP - US201615069255 20160314

DT - **

CT - || R141 (A1)
[US4906381](#) A 19900306 [
(BARBARO RONALD D [US]);
[US4199449](#) A 19800422 [
(SLEJKO FRANK L [US]);
[US3384240](#) A 19680521 [
(BERARDI MARTIN J);
[US4379750](#) A 19830412 [
(TIGGELBECK DONALD D)

CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[C02F1/283](#) ; [C02F1/50](#)

CQI - [B01D24/007](#) ; [B01D24/24](#) ;
[B01D24/40](#)

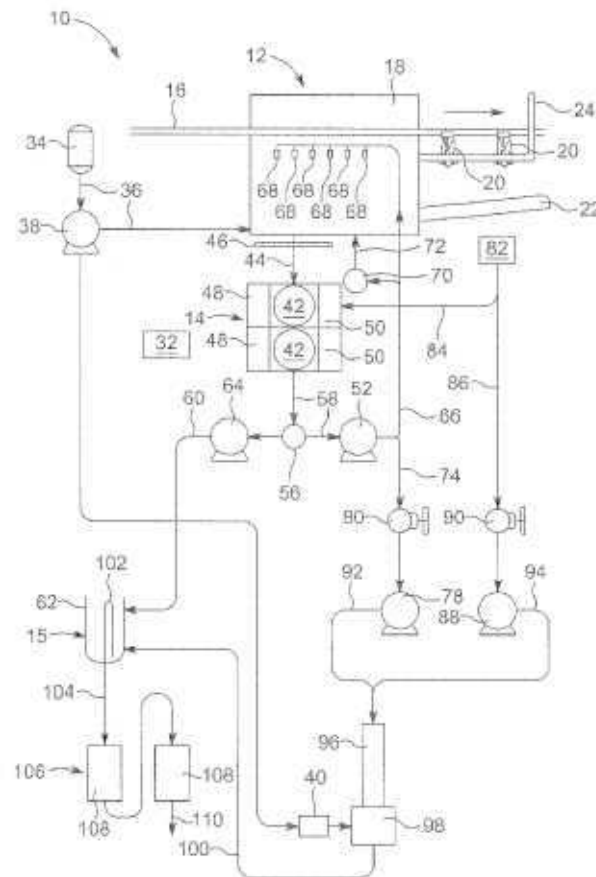
CCA - [C02F2103/32](#) ; [C02F2209/005](#) ;
[C02F2303/18](#) ; [C02F2303/185](#) ;
[C02F2303/24](#)

CQA - [B01D33/41](#) ; [B01D2201/084](#)

PA - SAFE FOODS CORP [US]

TI - **ANTIMICROBIAL
APPLICATION SYSTEM
WITH RECYCLE AND CAPTURE**

AB - A **capture** unit for use with
an **antimicrobial** application unit
may include an upstream filter
and a downstream filter. The
upstream filter may be
positioned to receive effluent
from the application unit and to
filter solid components from the
effluent. The resultant upstream
effluent filtrate may then be
passed downstream to the
downstream filter. The
downstream filter may be used
to filter an **antimicrobial**
component from the upstream
effluent filtrate and the resultant



downstream effluent filtrate may be suitable for disposal as wastewater discharge.

The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

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PN - [WO2016057295](#) A1 20160414

PR - US201414510385 20141009

AP - WO2015US53398 20151001

DT - *; Rep

CT - [US] ISR (A1)

[US2011297609](#) A1 20111208
[XY] (HU JIN [US])

[X] 1-2, 10

*; abstract; figures 1-3, 7-8;

paragraphs [0014][0018],

[0019], [0024], [0026]-[0030],

[0033] *

[Y] 3-9, 11-16, 23-26;

[US7651614](#) B2 20100126

[Y] (KELSEY ROBERT L [US], et al)

[Y] 8-9

*; abstract; column 3, lines 1-10;

column 6, lines 45-67 *;

[US3260369](#) A 19660712

[Y] (GRUENWALDER LOU A)

[Y] 3-9, 23-26

*; figures 1-4; column 1, lines 11-

14; column 4, lines 15-35, 70-75;

column 5, lines 1-55; column 6,

lines 2-3, 35-60 *;

[US4586287](#) A 19860506

[Y] (BLEASDALE WILLIAM W [CA],

et al)

[Y] 12, 18, 22

*; figures 4a-e; column 2, lines 1-

20 *;

[US2008241269](#) A1 20081002

[Y] (VELASQUEZ DAVID J [US])

[Y] 15, 21-22

*; paragraphs [0036], [0108] *;

[WO2004043162](#) A2 20040527

[XY] (NOLEN GARY [US], et al)

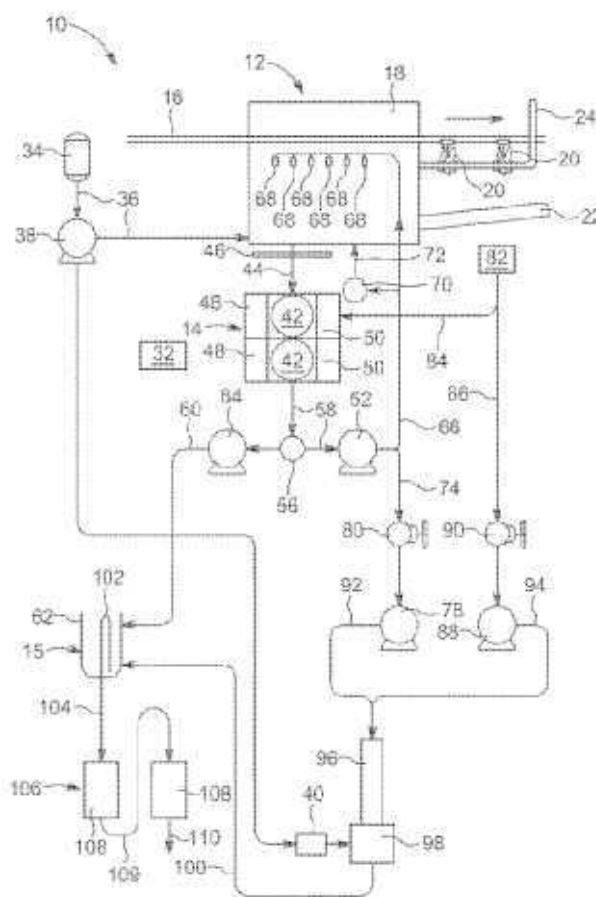


FIG. 1

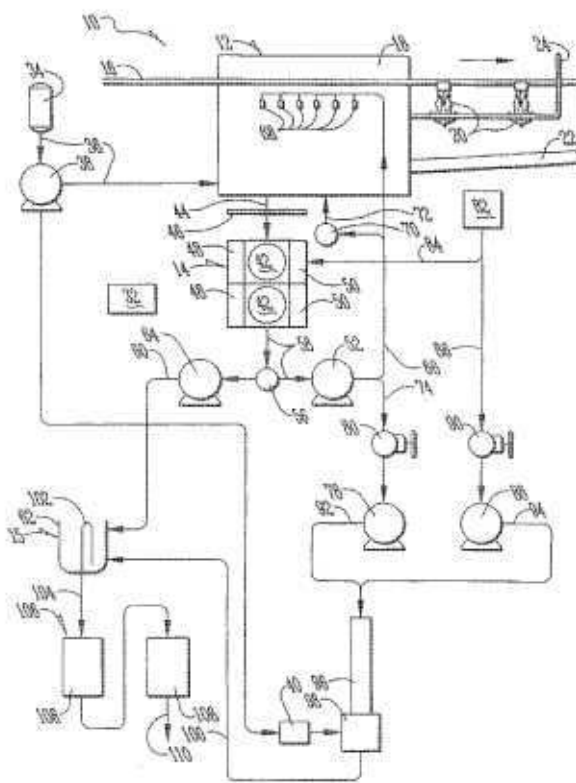
[X] 17
 * ; figure 1; page 6, lines 1-30;
 page 7, lines 15-20; page 9, lines
 1-15; figure 1 *
 [Y] 11-16, 18-22;
[US2010123028](#) A1 20100520
 [Y] (RAYNER RICHARD D [US])
 [Y] 13-16, 19-22
 * ; figures 1-3; paragraphs
 [0015], [0019] *;
[US8012002](#) B2 20110906
 [A] (BROWN TIMOTHY D [US])
 [A] 12, 18, 22
 * ; entire document *;
[US2003136862](#) A1 20030724
 [A] (FILICICCHIA DANIEL J [US], et
 al)
 [A] 13, 19
 * ; entire document *

- CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[B01D33/76](#) ; [B01D24/14](#) ;
[B01D24/40](#) ; [C02F1/001](#) ;
[C02F1/006](#) ; [C02F1/283](#)
- CCA - [C02F2103/22](#) ; [C02F2103/32](#) ;
[C02F2303/04](#)
- PA - SAFE FOODS CORP [US]
- TI - **ANTIMICROBIAL**
 APPLICATION **SYSTEM**
 WITH **RECYCLE AND CAPTURE**
- AB - A **capture** unit for use with
 an **antimicrobial** application unit
 may include an upstream filter
 and a downstream filter. The
 upstream filter may be
 positioned to receive effluent
 from the application unit and to
 filter solid components from the
 effluent. The resultant upstream
 effluent filtrate may then be
 passed downstream to the
 downstream filter. The
 downstream filter may be used
 to filter an **antimicrobial**
 component from the upstream
 effluent filtrate and the resultant
 downstream effluent filtrate may
 be suitable for disposal as
 wastewater discharge.

The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

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- PN - [US2015296858](#) A1 20151022
- PNFP - US9345262 B2 20160524
- PR - US201514790246
20150702; US201414471846
20140828; US20030535030
20031112; WO2003US35933
20031112; US20020425679P
20021112
- AP - US201514790246 20150702
- DT - **
- CCI - [A23L3/3463](#) ; [A23L3/3526](#) ;
[A23B4/20](#) ; [A23B4/26](#) ;
[A61L2/18](#)
- CUI - [A23L3/3454](#) ; [A23L3/3589](#) ;
[A23B4/24](#) ; [A61L2/24](#)
- PA - (A1 B2)
SAFE FOODS CORP [US]
- TI - (A1)
APPLICATION **SYSTEM**
WITH **RECYCLE** AND RELATED USE
OF **ANTIMICROBIAL** QUATERNARY
AMMONIUM **COMPOUND**
- (B2)
Application **system** with **recycle**
and related use of **antimicrobial**
quaternary
ammonium **compound**
- AB - (A1 B2)
An **antimicrobial**
application **system** is disclosed,
comprising an **antimicrobial**
application unit and a **recycle**
unit. An initial,
dilute **antimicrobial** composition
is prepared. The composition is
provided to the **antimicrobial**
application unit and applied to
workpieces, such as raw poultry.



After application to the workpieces, the composition is returned to the **recycle** tank. The concentration of the **antimicrobial** in the **recycle** tank is monitored, and additional **antimicrobial** is automatically added if the concentration of the **antimicrobial** in the composition falls below a desired amount. The composition is periodically diverted to a **capture** tank, and the **antimicrobial** is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

PN - [US2015021258](#) A1 20150122

PNFP - US9352983 B2 20160531

PR - US201414510385
20141009; US20080535030
20081010; WO2003US35933
20031112; US20020425679P
20021112; US20050535030
20050511

AP - US201414510385 20141009

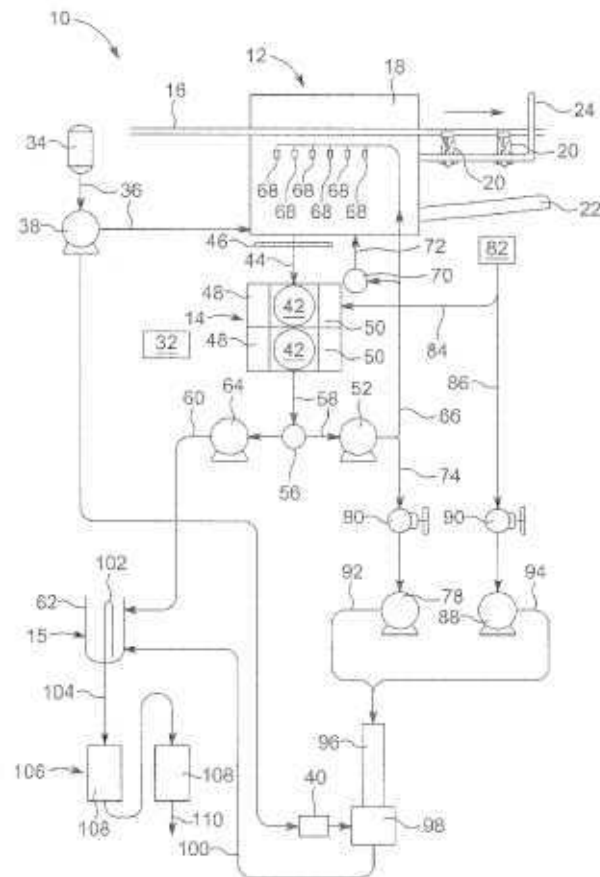
DT - *; Rep

CT - || STSE (A1)
[US5133860](#) A 19920728 [] (TAI
LIANG C [TW]);
[US176896](#) A 18760502 [];
[US2012255896](#) A1 20121011 []
(COURTEMANCHE ALAIN [CA], et
al);
[US2004195167](#) A1 20041007 []
(KAMO EIICHI [JP], et al);
[US2002074292](#) A1 20020620 []
(SCHLEGEL ANDREAS [DE], et al);
[US2009107919](#) A1 20090430 []
(BURBA III JOHN L [US], et al);
[US2011309036](#) A1 20111222 []
(HUSSAM ABUL [US], et al)
- || STSE (B2)
[US176896](#) A 18760502 [];
[US5133860](#) A 19920728 [] (TAI
LIANG C [TW]);
[US2002074292](#) A1 20020620 []
(SCHLEGEL ANDREAS [DE], et al);
[US2004195167](#) A1 20041007 []
(KAMO EIICHI [JP], et al);
[US2009107919](#) A1 20090430 []
(BURBA III JOHN L [US], et al);
[US2011309036](#) A1 20111222 []
(HUSSAM ABUL [US], et al);
[US2012255896](#) A1 20121011 []
(COURTEMANCHE ALAIN [CA], et
al)

CCI - [B01D33/11](#) ; [B01D33/50](#) ;
[C02F1/283](#) ; [C02F1/50](#)

CQI - [B01D24/007](#) ; [B01D24/24](#) ;
[B01D24/40](#)

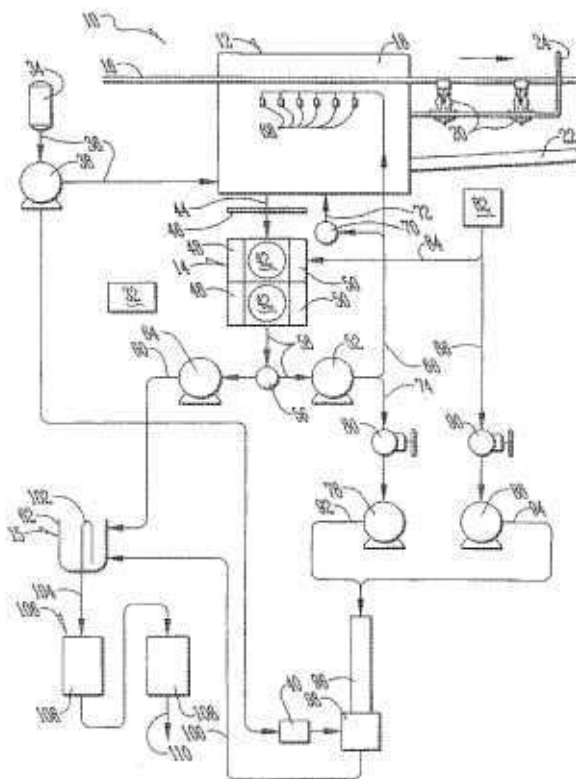
CCA - [C02F2103/32](#) ; [C02F2209/005](#) ;
[C02F2303/18](#) ; [C02F2303/185](#) ;
[C02F2303/24](#)



CQA	- B01D33/41 ; B01D2201/084
PA	- (A1 B2) SAFE FOODS CORP [US]
TI	- (A1) ANTIMICROBIAL APPLICATION SYSTEM WITH RECYCLE AND CAPTURE - (B2) Antimicrobial application system with recycle and capture
AB	- (A1 B2) A capture unit for use with an antimicrobial application unit may include an upstream filter and a downstream filter. The upstream filter may be positioned to receive effluent from the application unit and to filter solid components from the effluent. The resultant upstream effluent filtrate may then be passed downstream to the downstream filter. The downstream filter may be used to filter an antimicrobial component from the upstream effluent filtrate and the resultant downstream effluent filtrate may be suitable for disposal as wastewater discharge. The antimicrobial is preferably a quaternary ammonium compound , is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

chloride, and is most preferably cetylpyridinium chloride.

- 11/16 © EPODOC / EPO
- PN - [US2014370172](#) A1 20141218
- PNFP - US9185929 B2 20151117
- PR - US201414471846
20140828; US20080535030
20081010; WO2003US35933
20031112; US20020425679P
20021112
- AP - US201414471846 20140828
- DT - **
- CT - || STSE (A1)
[USRE32695E](#) E 19880614 [];
[US2003047087](#) A1 20030313 []
(PHEBUS RANDALL K [US], et al);
[US5980375](#) A 19991109 []
(ANDERSON GERALD W [US], et al);
[US4965911](#) A 19901030 []
(DAVEY KENNETH R [AU])
- || STSE (B2)
[USRE32695E](#) E 19880614 [];
[US4965911](#) A 19901030 []
(DAVEY KENNETH R [AU]);
[US5980375](#) A 19991109 []
(ANDERSON GERALD W [US], et al);
[US2003047087](#) A1 20030313 []
(PHEBUS RANDALL K [US], et al)
- CCI - [A23L3/3463](#) ; [A23L3/3526](#) ;
[A23B4/20](#) ; [A23B4/26](#) ;
[A61L2/18](#)
- CUI - [A23L3/3454](#) ; [A23L3/3589](#) ;
[A23B4/24](#) ; [A61L2/24](#)
- PA - (A1 B2)
SAFE FOODS CORP [US]
- TI - (A1)
Application **System** with **Recycle**
and Related Use of **Antimicrobial**
Quaternary
Ammonium **Compound**
- (B2)
Application **system** with **recycle**
and related use of **antimicrobial**



quaternary
ammonium **compound**

AB

- (A1 B2)

An **antimicrobial** application **system** is disclosed, comprising an **antimicrobial** application unit and a **recycle** unit. An initial, dilute **antimicrobial** composition is prepared. The composition is provided to the **antimicrobial** application unit and applied to workpieces, such as raw poultry. After application to the workpieces, the composition is returned to the **recycle** tank. The concentration of the **antimicrobial** in the **recycle** tank is monitored, and additional **antimicrobial** is automatically added if the concentration of the **antimicrobial** in the composition falls below a desired amount. The composition is periodically diverted to a **capture** tank, and the **antimicrobial** is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

PN - [US2009196967](#) A1 20090806

PNFP - US9072315 B2 20150707

PR - US20030535030
20031112; US20020425679P
20021112; WO2003US35933
20031112

AP - US20030535030 20031112

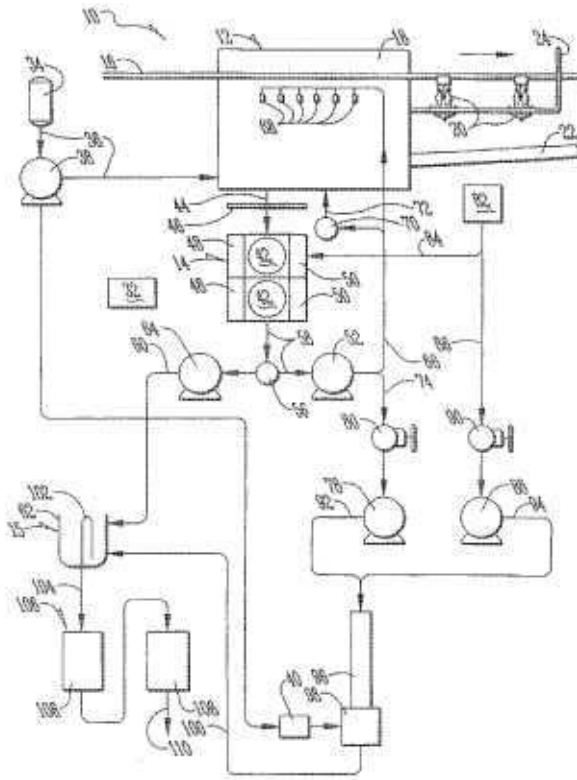
DT - **

CT - || STSE (A1)
[US4996070](#) A 19910226 [] (NAFISI-MOVAGHAR KARIM [US]);
[US5421883](#) A 19950606 [] (BOWDEN DONALD R [US]);
[US6126810](#) A 20001003 [] (FRICKER CHRISTOPHER M [US], et al);
[US2002064585](#) A1 20020530 [] (CHRISTIANSON RICHARD [US], et al);
[US5399541](#) A 19950321 [] (ISHII TOHRU [JP], et al);
[US5968338](#) A 19991019 [] (HULME DAVID R [US], et al)
- || STSE (B2)
[US4996070](#) A 19910226 [] (NAFISI-MOVAGHAR KARIM [US]);
[US5399541](#) A 19950321 [] (ISHII TOHRU [JP], et al);
[US5421883](#) A 19950606 [] (BOWDEN DONALD R [US]);
[US5968338](#) A 19991019 [] (HULME DAVID R [US], et al);
[US6126810](#) A 20001003 [] (FRICKER CHRISTOPHER M [US], et al);
[US2002064585](#) A1 20020530 [] (CHRISTIANSON RICHARD [US], et al)

CCI - [A23L3/3463](#) ; [A23L3/3526](#) ;
[A23B4/20](#) ; [A23B4/26](#) ;
[A61L2/18](#)

CUI - [A23L3/3454](#) ; [A23L3/3589](#) ;
[A23B4/24](#) ; [A61L2/24](#)

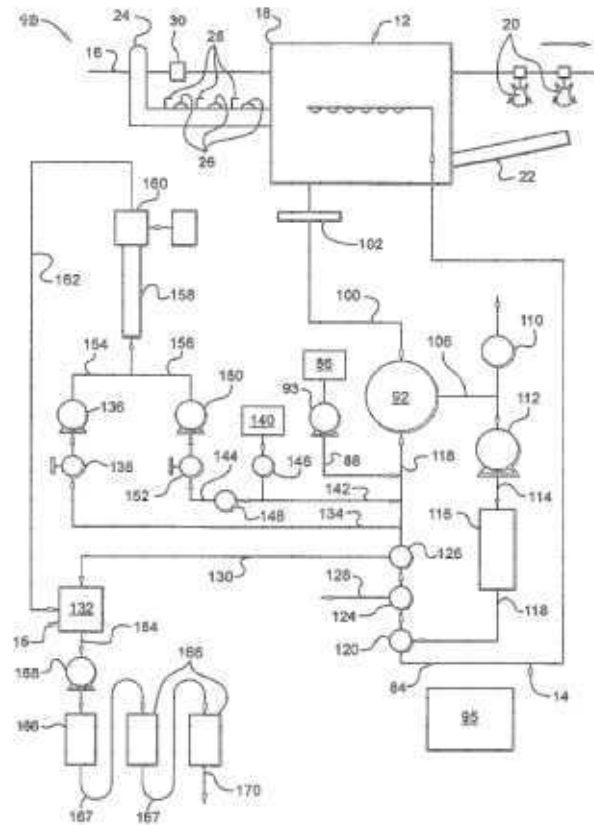
PA - (A1)
SAFE FOODS CORP [US]



	- (B2) NOLEN GARY M [US]; RHEINGANS JOE [US]; BEERS KELLY WAYNE [US]; SAFE FOODS CORP [US]
TI	- (A1) Application System With Recycle and Related Use of Antimicrobial Quaternary Ammonium Compound - (B2) Application system with recycle and related use of antimicrobial quaternary ammonium compound
AB	- (A1 B2) An antimicrobial application system is disclosed, comprising an antimicrobial application unit and a recycle unit. An initial, dilute antimicrobial composition is prepared. The composition is provided to the antimicrobial application unit and applied to workpieces, such as raw poultry. After application to the workpieces, the composition is returned to the recycle tank. The concentration of the antimicrobial in the recycle tank is monitored, and additional antimicrobial is automatically added if the concentration of the antimicrobial in the composition falls below a desired amount. The composition is periodically diverted to a capture tank, and the antimicrobial is selectively removed from the composition. The removed antimicrobial and remaining composition are then disposed of in appropriate manners. The antimicrobial is preferably a quaternary ammonium compound, is more preferably an alkylpyridinium

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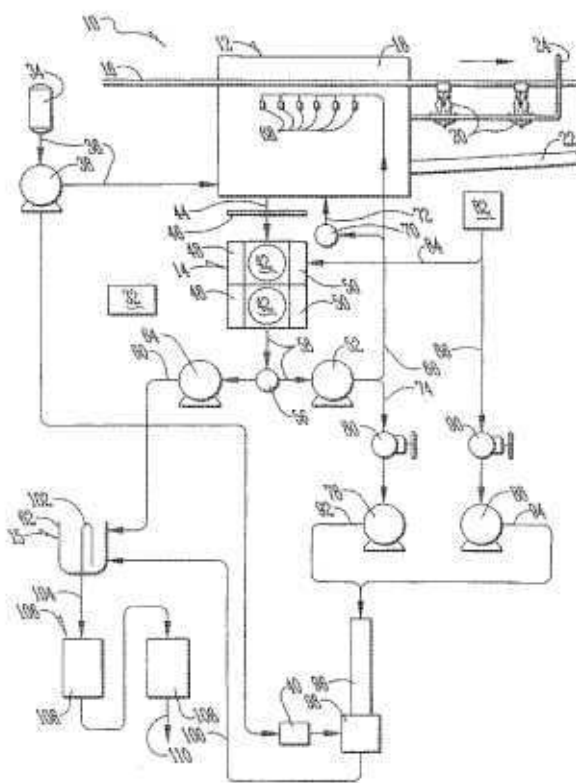
PN	- US2007025897 A1 20070201
PR	- US20060409514 20060421; WO2003US35933 20031112; US20020425679P 20021112; US20050674230P 20050422
AP	- US20060409514 20060421
DT	- *, Rep
CT	- R141 (A1) US2003010699 A1 []; US6348227 B1 []; US6536602 B2 []; US6258262 B1 []
CCI	- A23L3/358 ; A23B4/027 ; A61L2/18 ; A61L2/24
PA	- SAFE FOODS CORP [US]
TI	- Application system with recycle and related use of antimicrobial quaternary ammonium compound
AB	- An antimicrobial application system is disclosed, comprising an antimicrobial application unit and a recycle unit. An initial, dilute antimicrobial composition is prepared. The composition is provided to the antimicrobial application unit and applied to work pieces, such as raw poultry. After application to the work pieces, the composition is returned to the recycle tank. The concentration of the antimicrobial in the recycle tank is monitored, and additional antimicrobial is automatically added if the concentration of the antimicrobial in the composition falls below a desired amount. The composition is periodically



diverted to a **capture** tank, and the **antimicrobial** is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

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- PN - [WO2004043162](#) A2 20040527
- PNFP - [WO2004043162](#) A3 20040715
- PR - [US20020425679P](#) 20021112
- AP - [WO2003US35933](#) 20031112
- DT - *; Rep
- CT - |US| ISR (A3)
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 [Y] (NAFISI-MOVAGHAR KARIM [US]);
[US5421883](#) A 19950606
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- CCI - [A23L3/3463](#) ; [A23L3/3526](#) ;
[A23B4/20](#) ; [A23B4/26](#) ;
[A61L2/18](#)
- CUI - [A23L3/3454](#) ; [A23L3/3589](#) ;
[A23B4/24](#) ; [A61L2/24](#)



- PA - (A2 A3)
NOLEN GARY [US]; BEERS KELLY [US]; RHEINGANS JOE [US]; SAFE FOODS CORP [US]
- TI - (A2 A3)
APPLICATION **SYSTEM**
WITH **RECYCLE** AND RELATED USE
OF **ANTIMICROBIAL** QUATERNARY
AMMONIUM **COMPOUND**
- AB - (A2 A3)
An **antimicrobial** application **system** is disclosed, comprising an **antimicrobial** application unit and a **recycle** unit. An initial, dilute **antimicrobial** composition is prepared. The composition is provided to the **antimicrobial** application unit and applied to workpieces, such as raw poultry. After application to the workpieces, the composition is returned to the **recycle** tank. The concentration of the **antimicrobial** in the **recycle** tank is monitored, and additional **antimicrobial** is automatically added if the concentration of the **antimicrobial** in the composition falls below a desired amount. The composition is periodically diverted to a **capture** tank, and the **antimicrobial** is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

PR - US20020425679P 20021112; WO2003US35933 20031112

AP - MX2005PA05069 20031112

DT - I

CCI - [A23L3/3463](#) ; [A23L3/3526](#) ; [A23B4/20](#) ; [A23B4/26](#) ; [A61L2/18](#)

CUI - [A23L3/3454](#) ; [A23L3/3589](#) ; [A23B4/24](#) ; [A61L2/24](#)

PA - SAFE FOODS CORP [US]

TI - APPLICATION **SYSTEM** WITH **RECYCLE** AND RELATED USE OF **ANTIMICROBIAL** QUATERNARY AMMONIUM **COMPOUND**.

AB - An **antimicrobial** application **system** is disclosed, comprising an **antimicrobial** application unit and a **recycle** unit. An initial, dilute **antimicrobial** composition is prepared. The composition is provided to the **antimicrobial** application unit and applied to workpieces, such as raw poultry. After application to the workpieces, the composition is returned to the **recycle** tank. The concentration of the **antimicrobial** in the **recycle** tank is monitored, and additional **antimicrobial** is automatically added if the concentration of the **antimicrobial** in the composition falls below a desired amount. The composition is periodically diverted to a **capture** tank, and the **antimicrobial** is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

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PN - [CA2505512](#) A1 20040527

PNFP - CA2505512 C 20160503

PR - US20020425679P
20021112; WO2003US35933
20031112

AP - CA20032505512 20031112

DT - I

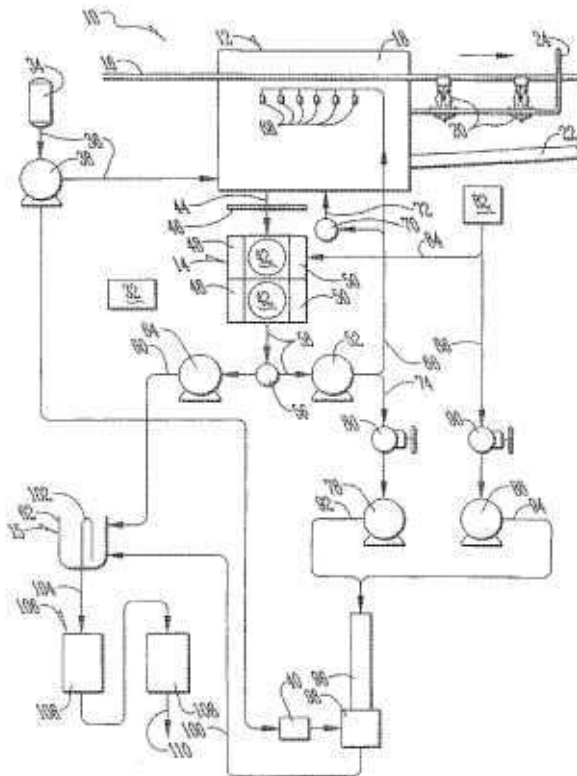
CCI - [A23L3/3463](#) ; [A23L3/3526](#) ;
[A23B4/20](#) ; [A23B4/26](#) ;
[A61L2/18](#)

CUI - [A23L3/3454](#) ; [A23L3/3589](#) ;
[A23B4/24](#) ; [A61L2/24](#)

PA - (A1 C)
SAFE FOODS CORP [US]

TI - (A1 C)
APPLICATION **SYSTEM**
WITH **RECYCLE** AND RELATED USE
OF **ANTIMICROBIAL** QUATERNARY
AMMONIUM **COMPOUND**

AB - (A1)
An **antimicrobial**
application **system** is disclosed,
comprising an antimicrobial I



application unit and a **recycle** unit. An initial, dilute **antimicrobial** composition is prepared. The composition is provided to the **antimicrobial** application unit and applied to workpieces, such as raw poultry. After application to the workpieces, the composition is returned to the **recycle** tank. The concentration of the **antimicrobial** in the **recycle** tank is monitored, and additional **antimicrobial** is automatically added if the concentration of the **antimicrobial** in the composition falls below a desired amount. The composition is periodically diverted to a **capture** tank, and the antimicrobial is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.

- (C)

An **antimicrobial** application **system** is disclosed, comprising an **antimicrobial** application unit and a **recycle** unit. An initial, dilute **antimicrobial** composition is prepared. The composition is provided to the **antimicrobial** application unit and applied to workpieces, such as raw poultry. After application to the workpieces, the composition is returned to the **recycle** tank. The concentration of the **antimicrobial** in the **recycle** tank is monitored, and

additional **antimicrobial** is automatically added if the concentration of the **antimicrobial** in the composition falls below a desired amount. The composition is periodically diverted to a **capture** tank, and the **antimicrobial** is selectively removed from the composition. The removed **antimicrobial** and remaining composition are then disposed of in appropriate manners. The **antimicrobial** is preferably a quaternary ammonium **compound**, is more preferably an alkylpyridinium chloride, and is most preferably cetylpyridinium chloride.