



LATVIJAS VIDES, ĢEOLOĢIJAS  
UN METEOROLOĢIJAS CENTRS

Regulation (EU) No 528/2012 concerning the  
making available on the market and use of biocidal  
products

**PRODUCT ASSESSMENT REPORT OF A  
BIOCIDAL PRODUCT FAMILY FOR SIMPLIFIED  
AUTHORISATION APPLICATION**

(submitted by the evaluating Competent Authority)

**PUBLIC**



Biocidal product family **SALVESAFE A**

Product types: PT1 (Human hygiene),  
PT2 (Disinfectants and algaecides not intended for direct  
application to humans or animals) and  
PT4 (Food and feed area)

**Lactic acid** is included in the Annex I of Regulation (EU) No  
528/2012

Case Number in R4BP3: BC-EG005446-55

Evaluating Competent Authority: Latvia

Date: 15/November/2017

*The following version replaces PAR dated 10/August/2016*

## Contents

<b>1</b>	<b>CONCLUSION .....</b>	<b>4</b>
<b>2</b>	<b>ASSESSMENT REPORT .....</b>	<b>5</b>
2.1	SUMMARY OF THE PRODUCT ASSESSMENT .....	5
2.1.1	<i>Administrative information .....</i>	5
2.1.1.1	Identifier of the product family .....	5
2.1.1.1.1	Trade names of the products within the family "SALVESAFE A" .....	5
2.1.1.2	Authorisation holder .....	6
2.1.1.3	Manufacturer of the products of the family .....	6
2.1.1.4	Manufacturer(s) of the active substance .....	7
2.1.2	<i>Product family composition and formulation .....</i>	8
2.1.2.1	Identity of the active substance .....	8
2.1.2.2	Candidate for substitution .....	8
2.1.2.3	Qualitative and quantitative information on the composition of the biocidal product family .....	8
2.1.2.4	Information on technical equivalence .....	8
2.1.2.5	Information on the substance(s) of concern .....	8
2.1.2.6	Type of formulation .....	9
2.1.3	<i>Hazard and precautionary statements .....</i>	9
2.1.4	<i>Authorised uses .....</i>	10
2.1.4.1	Use description .....	10
2.1.4.2	Use-specific instructions for use .....	12
2.1.4.3	Use-specific risk mitigation measures .....	12
2.1.4.4	Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment .....	12
2.1.4.5	Where specific to the use, the instructions for safe disposal of the product and its packaging .....	12
2.1.4.6	Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage .....	12
2.1.5	<i>General directions for use .....</i>	12
2.1.5.1	Instructions for use .....	12
2.1.5.2	Risk mitigation measures .....	12
2.1.5.3	Particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment .....	13
2.1.5.4	Instructions for safe disposal of the product and its packaging .....	13
2.1.5.5	Conditions of storage and shelf-life of the product under normal conditions of storage ..	13
2.1.6	<i>Other information .....</i>	13
2.1.7	<i>Packaging of the biocidal products .....</i>	14
2.1.8	<i>Documentation .....</i>	15
2.1.8.1	Data submitted in relation to product application .....	15
2.2	ASSESSMENT OF THE BIOCIDAL PRODUCT FAMILY .....	16
2.2.1	<i>Intended uses as applied for by the Applicant .....</i>	16
2.2.2	<i>Physical, chemical and technical properties .....</i>	19
2.2.3	<i>Physical hazards and respective characteristics .....</i>	21
2.2.4	<i>Methods for detection and identification .....</i>	21
2.2.5	<i>Efficacy against target organisms .....</i>	22
2.2.5.1	Function and field of use .....	<b>Error! Bookmark not defined.</b>
2.2.5.2	Effects on target organisms, including unacceptable suffering ....	<b>Error! Bookmark not defined.</b>
2.2.5.3	Mode of action, including time delay .....	<b>Error! Bookmark not defined.</b>
2.2.5.4	Efficacy data .....	32
2.2.5.5	Occurrence of resistance and resistance management .....	37
2.2.5.6	Known limitations .....	37
2.2.5.7	Evaluation of the label claims .....	38
2.2.6	<i>Risk assessment for human health .....</i>	39
2.2.6.1	Assessment of effects on Human Health .....	39
2.2.6.2	Exposure assessment .....	41
2.2.6.3	Risk characterisation for human health .....	41
2.2.7	<i>Risk assessment for the environment .....</i>	41

---

2.2.7.1	Effects assessment on the environment .....	41
2.2.8	<i>Measures to protect man, animals and the environment</i> .....	42
<b>3</b>	<b>CONFIDENTIAL ANNEX I</b> .....	<b>45</b>
3.1.	LIST OF STUDIES FOR THE BIOCIDAL PRODUCT FAMILY .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
3.2.	SUMMARIES OF THE EFFICACY STUDIES .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
3.3.	BIOCIDAL PRODUCT FAMILY COMPOSITION AND FORMULATION ..	<b>ERROR! BOOKMARK NOT DEFINED.</b>
3.4.	ASSESSMENT OF ACUTE EYE IRRITATION (TEST RESULTS).....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
3.5.	HARMONISATION OF AUTHORISED BIOCIDAL PRODUCT'S TRADE NAMES AND SAMPLE'S TRADE NAMES INVESTIGATED ON EFFICACY, STORAGE STABILITY, EYE IRRITATION AND BIODEGRADABILITY .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
3.6.	LIST OF REFERENCES .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>

## 1 CONCLUSION

The ready-to-use biocidal products within family "SALVESAFE A", formulated by SALVECO S.A.S. (France), with active substance *Lactic acid* (CAS No. 50-21-5, EC No. 200-018-0) at the concentration range 0.32-1.76% w/w are authorised for the following product types (PT): human hygiene disinfectants (PT 1), disinfectants and algacides not intended for direct application to humans or animals (PT 2) and food and feed area disinfectants (PT 4).

Biocidal product family „SALVESAFE A“ is claimed with bactericidal, yeasticidal and virucidal activity against one specific virus<sup>1</sup> in domestic, institutional and industrial area. The detailed list of target organisms and conclusion on efficacy is given in point 2.2.5.4 of Section 2.2.5.

The Latvian CA considers that sufficient data have been provided to verify the outcome and conclusions, and permits the simplified authorisation of the biocidal product family "SALVESAFE A" according conditions laid down in Article 25 of the Regulation (EU) No 528/2012:

- the active substance *Lactic acid* (CAS No. 50-21-5, EC No. 200-018-0) in the biocidal products appears in Annex I and satisfy the restriction specified in that Annex;
- the biocidal products do not contain any substances of concern;
- the biocidal products do not contain nanomaterials;
- the biocidal products are effective;
- the handling of the biocidal products and those intended use do not require personal protective equipment.

In accordance with Article 17(4) of the Regulation (EU) 528/2012 the authorisation number is valid from 3<sup>rd</sup> November 2014 until 2<sup>nd</sup> November 2024.

A person placing on the market or using the biocidal products included in biocidal product family "SALVESAFE A" must comply with the conditions for placing on the market or use of the above mentioned biocidal product family set out in authorisation letter issued by Latvian Competent Authority and Summary of Products Characteristics for biocidal product family.

---

<sup>1</sup> against only *Influenza virus A/H1N1*

## 2 ASSESSMENT REPORT

### 2.1 Summary of the product assessment

#### 2.1.1 Administrative information

##### 2.1.1.1 Identifier of the product family

Identifier	Country
SALVESAFE A	Latvia

##### 2.1.1.1.1 Trade names of the products within the family "SALVESAFE A"

Trade name	Product type	Intended Use*
SALVESAFE A21M	PT2, PT4	Use 2 Use 4
SALVESAFE A23M	PT2, PT4	Use 2 Use 4
SALVESAFE A25M	PT2, PT4	Use 2 Use 4
SALVESAFE A27M	PT2	Use 3
SALVESAFE A28M	PT1, PT2, PT4	Use 1 Use 2 Use 4
SALVESAFE A29M	PT1, PT2, PT4	Use 1 Use 2 Use 4
SALVESAFE A30M	PT2, PT4	Use 2 Use 4
SALVESAFE A31M	PT2, PT4	Use 2 Use 4
SALVESAFE A32M	PT2, PT4	Use 2 Use 4
SALVESAFE A33M	PT1	Use 1
SALVESAFE A34M	PT2, PT4	Use 2 Use 4
SALVESAFE A35M	PT1	Use 1
SALVESAFE A36M	PT1	Use 1
SALVESAFE A44M	PT1	Use 1

\* Use 1 – Disinfectants for human hygiene (disinfectants for hands); Use 2 – Disinfectants not intended for direct application to humans or animals (disinfectants for all washable hard surfaces); Use 3 – Algaecides; Use 4 – Food and feed area disinfectants (disinfectant for all washable hard surfaces).

## 2.1.1.2 Authorisation holder

<b>Name and address of the authorisation holder</b>	<b>Name</b>	SALVECO S.A.S.	
	<b>Address</b>	Avenue Pierre Mendès-France SAINT DIE DES VOSGES, F-88100, FRANCE	
<b>Authorisation number for biocidal product family</b>	LV/2014/SP/01 (EU-0006622-0000)		
<b>Authorisation numbers of the biocidal products within family</b>	<b>Trade name</b>	<b>Authorisation numbers in Latvia<sup>2</sup></b>	<b>Authorisation numbers according Asset numbers in R4BP3</b>
	SALVESAFE A21M	LV/2014/SP/01-1P	EU-0006622-0007
	SALVESAFE A23M	LV/2014/SP/01-2P	EU-0006622-0001
	SALVESAFE A25M	LV/2014/SP/01-4P	EU-0006622-0005
	SALVESAFE A27M	LV/2014/SP/01-7P	EU-0006622-0002
	SALVESAFE A28M	LV/2014/SP/01-8P	EU-0006622-0008
	SALVESAFE A29M	LV/2014/SP/01-9P	EU-0006622-0009
	SALVESAFE A30M	LV/2014/SP/01-10P	EU-0006622-0011
	SALVESAFE A31M	LV/2014/SP/01-11P	EU-0006622-0010
	SALVESAFE A32M	LV/2014/SP/01-12P	EU-0006622-0012
	SALVESAFE A33M	LV/2014/SP/01-13P	EU-0006622-0015
	SALVESAFE A34M	LV/2014/SP/01-14P	EU-0006622-0013
	SALVESAFE A35M	LV/2014/SP/01-15P	EU-0006622-0014
	SALVESAFE A36M	Not applicable	EU-0006622-0016
SALVESAFE A44M	Not applicable	EU-0006622-0017	
<b>Date of the authorisation</b>	3 <sup>rd</sup> November 2014		
<b>Expiry date of the authorisation</b>	2 <sup>nd</sup> November 2024		

## 2.1.1.3 Manufacturer of the products of the family

<b>Name of manufacturer 1</b>	<b>SALVECO S.A.S.</b>
<b>Address of manufacturer</b>	Avenue Pierre Mendès-France SAINT DIE DES VOSGES, F-88100, FRANCE
<b>Location of manufacturing sites</b>	Avenue Pierre Mendès-France SAINT DIE DES VOSGES, F-88100, FRANCE
<b>Name of manufacturer 2</b>	<b>MULTIFILL BV BULKONTVANGST</b>
<b>Address of manufacturer</b>	Constructieweg 25A, 3641, SB Mijdrecht, The Netherlands
<b>Location of manufacturing sites</b>	Constructieweg 25A, 3641, SB Mijdrecht, The Netherlands
<b>Name of manufacturer 3</b>	<b>Diversey Netherlands Production BV</b>
<b>Address of manufacturer</b>	Rembrandtlaan 414, 7545, ZW Enschede, The Netherlands
<b>Location of manufacturing sites</b>	Rembrandtlaan 414, 7545, ZW Enschede, The Netherlands
<b>Name of manufacturer 4</b>	<b>Diversey UK Production Ltd</b>
<b>Address of manufacturer</b>	Cotes Park Industrial Estate, Somercotes, DE55 4PA, Alfreton, United Kingdom

<sup>2</sup> Authorisation numbers had been assigned before the agreement to use Asset No.

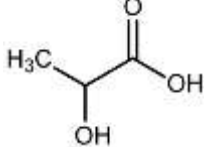
<b>Location of manufacturing sites</b>	Cotes Park Industrial Estate, Somercotes, DE55 4PA, Alfreton, United Kingdom
<b>Name of manufacturer 5</b>	<b>Diversey Espana Production S.L.U</b>
<b>Address of manufacturer</b>	Avenida Conde Duque 5, 7 y 9, Poligono Industrial La Postura, 28343, Valdemoro (Madrid), Spain
<b>Location of manufacturing sites</b>	Avenida Conde Duque 5, 7 y 9, Poligono Industrial La Postura, 28343, Valdemoro (Madrid), Spain
<b>Name of manufacturer 6</b>	<b>Diversey Italy Production Srl</b>
<b>Address of manufacturer</b>	Strada Statale 235, 26010, Bagnolo Cremasco (CR), Italy
<b>Location of manufacturing sites</b>	Strada Statale 235, 26010, Bagnolo Cremasco (CR), Italy
<b>Name of manufacturer 7</b>	<b>Diversey Germany Production oHG</b>
<b>Address of manufacturer</b>	Morschheimer Strasse 12, 67292, Kirchheimbolanden, Germany
<b>Location of manufacturing sites</b>	Morschheimer Strasse 12, 67292, Kirchheimbolanden, Germany
<b>Name of manufacturer 8</b>	<b>FOREVER PRODUCTS SA</b>
<b>Address of manufacturer</b>	Rue de la Glacerie 122, 6180, Courcelles, Belgium
<b>Location of manufacturing sites</b>	Rue de la Glacerie 122, 6180, Courcelles, Belgium

#### 2.1.1.4 Manufacturers of the active substance

<b>Active substance</b>	Lactic acid
<b>Name of manufacturer (1)</b>	PURAC BIOQUIMICA
<b>Address of manufacturer</b>	Gran Vial 19-25, 08160, Montmelo, Spain
<b>Location of manufacturing sites</b>	Gran Vial 19-25, 08160, Montmelo, Spain
<b>Name of manufacturer (2)</b>	JUNGBUNGZLAUER S.A
<b>Address of manufacturer</b>	Z. I Portuaire BP 32, 67390, Marckolsheim, France
<b>Location of manufacturing sites</b>	Z. I Portuaire BP 32, 67390, Marckolsheim, France

## 2.1.2 Product family composition and formulation

### 2.1.2.1 Identity of the active substance

Main constituent	
<b>ISO name</b>	Lactic acid
<b>IUPAC or EC name</b>	2-Hydroxypropanoic acid
<b>EC number</b>	200-018-0
<b>CAS number</b>	50-21-5
<b>Index number in Annex VI of CLP</b>	-
<b>Minimum purity / content</b>	88% w/w
<b>Structural formula</b>	

### 2.1.2.2 Candidate for substitution

Lactic acid does not meet the conditions laid down in Article 10 of Regulation (EU) No. 528/2012, and therefore is not considered as a candidate for substitution.

Lactic acid is listed in Annex I of the Regulation (EU) No 528/2012 under the Category 1 - Substances authorised as food additives according to Regulation (EC) No 1333/2008.

### 2.1.2.3 Qualitative and quantitative information on the composition of the biocidal product family

Common name	IUPAC name	Function	CAS number	EC number	Content (% w/w)	
					Min	Max
Lactic acid	2-Hydroxypropanoic acid	Active substance	50-21-5	200-018-0	0.32	1.76

The composition of the biocidal product family "SALVESAFE A" and composition of each biocidal product within family is described in the Section 3.3. of the confidential Annex I. The biocidal product family "SALVESAFE A" does not contain nanomaterials.

### 2.1.2.4 Information on technical equivalence

The active substance Lactic acid (CAS No. 50-21-5) is not included in the work programme for the systematic examination of all existing active substances contained in biocidal products referred to in Regulation (EU) No 528/2012. The assessment of technical equivalence of the active substance listed in Annex I of the Regulation (EU) No 528/2012 is not applicable.

### 2.1.2.5 Information on the substance(s) of concern

Latvian CA is evaluated two subjects of possible concerns: relating classification of the biocidal product family "SALVESAFE A" and relating to efficacy of the biocidal product



family "SALVESAFE A". The evaluation results are described in confidential PAR. The main conclusions are:

due to the relatively low content of each co-formulant's in the biocidal product family "SALVESAFE A", classification resulting from co-formulant's toxicological and ecotoxicological profile is not triggered and they are not considered as a substances of concern;

co-formulant's do not possess the biocidal function within family "SALVESAFE A" and should not be considered as active substances.

#### 2.1.2.6 Type of formulation

Ready-to-use water based liquids
----------------------------------

### 2.1.3 Hazard and precautionary statements

#### Classification and labelling of the products of the family according to the Regulation (EC) 1272/2008

Taking into account the maximal concentration of the Lactic acid and co-formulants in the biocidal product family "SALVESAFE A" and CLP requirements, the classification criteria are not fulfilled.

<b>Classification</b>	
Hazard category	Not applicable
Hazard statement	Not applicable
<b>Labelling</b>	
Signal words	Not applicable
Hazard statements	Not applicable
Precautionary statements	Not applicable
Note	Not applicable

## 2.1.4 Authorised uses

### 2.1.4.1 Use description

Table 1. Use 1 – **Disinfectants for human hygiene (disinfectants for hands)**

<b>Product Type</b>	Product type 1
<b>Where relevant, an exact description of the authorised use</b>	Ready-to-use disinfectant for hands with a bactericidal, yeasticidal and virucidal efficacy against only <i>Influenza virus A/H1N1</i> in domestic, institutional and industrial area.
<b>Target organisms (including development stage)</b>	Bacteria, yeasts and virus (only <i>Influenza virus A/H1N1</i> )
<b>Field of use</b>	Indoor, outdoor
<b>Application methods</b>	<b>Type of method:</b> manual application: spreading, foam application, brush treatment. <b>General description of the method:</b> Wet hands and wrists with water. Place 3 mL of product in the hollow of the hand. Rub hands and wrists for at least 30 seconds. Rinse thoroughly with clean water.
<b>Application rates and frequency</b>	<b>The application rate</b> 3 mL. <b>Frequency:</b> Apply once, repeat if renewed hand disinfection is needed.
<b>Categories of users</b>	Professional, non-professional and industrial
<b>Pack sizes and packaging material</b>	Section 2.1, point 2.1.7

Table 2. Use 2 – **Disinfectants not intended for direct application to humans or animals (disinfectants for all washable hard surfaces)**

<b>Product Type</b>	Product type 2
<b>Where relevant, an exact description of the authorised use</b>	Ready-to-use multi-purpose disinfectant with a bactericidal, yeasticidal and virucidal efficacy against only <i>Influenza virus A/H1N1</i> for hard surfaces in domestic, institutional and industrial area.
<b>Target organism (including development stage)</b>	Bacteria, yeasts and virus (only <i>Influenza virus A/H1N1</i> )
<b>Field of use</b>	Indoor, outdoor
<b>Application methods</b>	<b>Type of method:</b> manual application: spraying, spreading, foam application, brush treatment, dip treatment, immersion. <b>General description of the method:</b> Apply the product by fully wetting all surface for 5 minutes. Rub or brush if necessary.
<b>Application rate and frequency</b>	<b>The application rate</b> is to fully wet all surface. <b>Frequency:</b> Apply once. Repeat the application if necessary.
<b>Categories of users</b>	Professional, non-professional and industrial
<b>Pack sizes and packaging material</b>	Section 2.1, point 2.1.7

Table 3. Use 3 – **Algaecides not intended for direct application to humans or animals**

<b>Product Type</b>	Product type 2
<b>Where relevant, an exact description of the authorised use</b>	Ready-to-use solution with algaecide efficacy used as lichen and algae remover from hard surfaces: roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses.
<b>Target organism (including development stage)</b>	Algae and lichen
<b>Field of use</b>	Outdoor
<b>Application methods</b>	<b>Type of method:</b> manual application: spraying, spreading, foam application, brush treatment, dip treatment, immersion. <b>General description of the method:</b> Use in the dry weather. Apply the product by wetting all surface. Allow the product functioning until complete drying. Do not rinse. Brush if necessary 2 days later to remove debris.
<b>Application rate and frequency</b>	<b>The application rate</b> is to fully wet all surface. <b>Frequency:</b> Apply once and then monitor the situation regularly. Repeat the application if necessary.
<b>Categories of users</b>	Professional, non-professional and industrial
<b>Pack sizes and packaging material</b>	Section 2.1, point 2.1.7

Table 4. Use 4 – **Food and feed area disinfectants (disinfectant for all washable hard surfaces)**

<b>Product Type</b>	Product type 4
<b>Where relevant, an exact description of the authorised use</b>	Ready-to-use multi-purpose disinfectant with a bactericidal, yeasticidal and virucidal efficacy against only <i>Influenza virus A/H1N1</i> for hard surfaces in domestic, institutional and industrial area.
<b>Target organism (including development stage)</b>	Bacteria, yeasts and virus (only <i>Influenza virus A/H1N1</i> )
<b>Field of use</b>	Indoor, outdoor
<b>Application methods</b>	<b>Type of method:</b> manual application, spraying, spreading, foam application, brush treatment, dip treatment, immersion. <b>General description of the method:</b> Apply the product by fully wetting all surface for 5 minutes. Rub or brush if necessary. Rinse thoroughly with clean water.
<b>Application rate and frequency</b>	<b>The application rate</b> is to fully wet all surface. <b>Frequency:</b> Apply once. Repeat the application if necessary.
<b>Categories of users</b>	Professional, non-professional and industrial
<b>Pack sizes and packaging material</b>	Section 2.1, point 2.1.7

#### 2.1.4.2 Use-specific instructions for use

Section 2.1.5.

#### 2.1.4.3 Use-specific risk mitigation measures

Section 2.1.5.

#### 2.1.4.4 Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

Section 2.1.5.

#### 2.1.4.5 Where specific to the use, the instructions for safe disposal of the product and its packaging

Section 2.1.5.

#### 2.1.4.6 Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

Section 2.1.5.

### **2.1.5 General directions for use**

#### 2.1.5.1 Instructions for use

Use 1: Wet hands and wrists with water. Place 3 mL of product in the hollow of the hand. Rub hands and wrists for at least 30 seconds. Rinse thoroughly with clean water.

Use 2: Apply the product by fully wetting all surface for 5 minutes. Rub or brush if necessary.

Use 3: Use in the dry weather. Apply the product by wetting all surface. Allow the product functioning until complete drying. Do not rinse. Brush if necessary 2 days later to remove debris.

Use 4: Apply the product by fully wetting all surface for 5 minutes. Rub or brush if necessary. Rinse thoroughly with clean water.

#### 2.1.5.2 Risk mitigation measures

Non-professional users:  
Keep out of reach of children.  
If medical advice is needed, have product container or label at hand.

Professional and industrial users:  
Safety data sheet is available on request.

2.1.5.3 Particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

**No direct or indirect adverse effects are known.**

**First aid instructions:**

If swallowed: immediately call a POISON CENTER or doctor/physician.

In case of contact with eyes, remove contact lenses if present and rinse the eye slowly and gently with clean water.

2.1.5.4 Instructions for safe disposal of the product and its packaging

Dispose of content/container according to national regulation.

2.1.5.5 Conditions of storage and shelf-life of the product under normal conditions of storage

**Shelf-life:** Products can be stored at room temperature up to 24 months.

**Conditions:** Avoid cold, frost and heat.

**2.1.6 Other information**

Summary: ready-to-use water based disinfectants in domestic, institutional and industrial area.

Bactericidal and yeasticidal claim for PT2 and PT4 is relevant for biocidal products with Lactic acid concentration  $\geq 0.32\%$  w/w and  $\leq 1.76\%$  w/w.

Bactericidal and yeasticidal claim for PT1 is relevant for biocidal products with Lactic acid concentration  $\geq 1.75\%$  w/w and  $\leq 1.76\%$  w/w.

Efficacy against *Influenza virus A/H1N1* for biocidal products claimed for PT1 with Lactic acid concentration  $\geq 1.75\%$  w/w and  $\leq 1.76\%$  w/w.

Efficacy against *Influenza virus A/H1N1* for biocidal products claimed for PT2 and PT4 with Lactic acid concentration  $\geq 0.42\%$  w/w and  $\leq 1.76\%$  w/w.

Efficacy against algae for biocidal product with Lactic acid concentration  $\geq 1.69\%$  w/w and  $\leq 1.76\%$  w/w.

### 2.1.7 Packaging of the biocidal products

Type of packaging	Volume of the packaging	Use (acc. point 2.1.4)	Material of the packaging	Type and material of closure(s)	Intended user	Compatibility of the product with the proposed packaging materials (Yes/No)
Bag/Sack	0.01-5L	Use 1 Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap	Industrial, Professional, Non-professional	Yes
Bottle	0.01-2L	Use 1 Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap, Dispensing Cap	Industrial, Professional, Non-professional	Yes
Can/Tin	0.1-1L	Use 1 Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap, Dispensing Cap	Industrial, Professional, Non-professional	Yes
Drum	10-210L	Use 1 Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap	Industrial, Professional, Non-professional	Yes
IBC (intermediate bulk container)	1000L	Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap	Industrial	Yes
Jerry can	1-80L	Use 1 Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap, Dispensing cap	Industrial, Professional, Non-professional	Yes
Airspray	0.15-1L	Use 1 Use 2 Use 3 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Trigger Cap	Industrial, Professional, Non-professional	Yes
Pouches	0.05-5L	Use 1 Use 2 Use 4	Plastic: HDPE, LDPE, PET, PE, PP	Cap pump	Industrial, Professional, Non-professional	Yes

All used packaging must be secure, closed, tight, strong and durable. Packaging can be refilled only with product foreseen for that purpose.

### **2.1.8 Documentation**

#### 2.1.8.1 Data submitted in relation to product application

No new data was provided for the active substance Lactic acid or biocidal product family.

CONFIDENTIAL

## 2.2 Assessment of the biocidal product family

### 2.2.1 Intended uses as applied for by the Applicant

Table 1. Intended use 1 – **Disinfectants for human hygiene (disinfectant for hands)**

Product Type	Product Type 1
Where relevant, an exact description of the authorised use	Ready-to-use disinfectant for hands with a bactericidal, yeasticidal and virucidal efficacy against only <i>Influenza virus A/H1N1</i> in domestic, institutional and industrial area.
Target organism (Test organisms)	<p>Bacteria:</p> <ul style="list-style-type: none"> <li>- <i>Pseudomonas aeruginosa</i>, common name: bacteria, aerobic, Gram-negative;</li> <li>- <i>Staphylococcus aureus</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Escherichia coli</i>, common name: bacteria, facultative anaerobic, Gram-negative;</li> <li>- <i>Enterococcus hirae</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Escherichia coli</i> K-12, common name: bacteria, facultative anaerobic, Gram-negative.</li> </ul> <p>Yeast:</p> <ul style="list-style-type: none"> <li>- <i>Candida albicans</i>, common name: yeast.</li> </ul> <p>Virus:</p> <ul style="list-style-type: none"> <li>- <i>Influenza virus A/H1N1</i>, common name: virus.</li> </ul>
Field of use	Indoor, Outdoor
Application method(s)	Type of method: manual application: spreading, foam application, brush treatment. General description of the method: Wet hands and wrists with water. Place 3 mL of product in the hollow of the hand. Rub hands and wrists for at least 30 seconds. Rinse thoroughly with clean water.
Application rate and frequency	The application rate is 3 mL. Frequency: Apply once, repeat if renewed hand disinfection is needed.
Categories of users	Professional, non-professional and industrial
Pack sizes and packaging material	Section 2.1, point 2.1.7

Table 2. Intended use 2 – **Disinfectants not intended for direct application to humans or animals (disinfectant for all washable hard surfaces)**

Product Type	Product type 2
Where relevant, an exact description of the authorised use	Ready-to-use multi-purpose disinfectant with a bactericidal, yeasticidal and virucidal efficacy against only <i>Influenza virus A/H1N1</i> for hard surfaces in domestic, institutional and industrial area.
Target organism (Test organisms)	<p>Bacteria:</p> <ul style="list-style-type: none"> <li>- <i>Pseudomonas aeruginosa</i>, common name: bacteria, aerobic, Gram-negative;</li> <li>- <i>Staphylococcus aureus</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Escherichia coli</i>, common name: bacteria, facultative</li> </ul>



	<p>anaerobic, Gram-negative;</p> <ul style="list-style-type: none"> <li>- <i>Enterococcus hirae</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Staphylococcus aureus methicillin-resistant</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Salmonella typhimurium</i>, common name: bacteria, facultative anaerobic, Gram-negative;</li> <li>- <i>Listeria monocytogenes</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Acinetobacter baumannii</i>, common name: bacteria, aerobic, Gram-negative;</li> <li>- <i>Legionella pneumophila</i>, common name: bacteria, aerobic, Gram-negative.</li> </ul> <p>Yeast:</p> <ul style="list-style-type: none"> <li>- <i>Candida albicans</i>, common name: yeast</li> </ul> <p>Virus:</p> <ul style="list-style-type: none"> <li>- <i>Influenza virus A/H1N1</i>, common name: virus.</li> </ul>
Field of use	Indoor, outdoor
Application method(s)	Type of method: manual application: spraying, spreading, foam application, brush treatment, dip treatment, immersion. General description of the method: Apply the product by fully wetting all surface for 5 minutes. Rub or brush if necessary.
Application rate and frequency	The application rate is to fully wet all surface. Frequency: Apply once. Repeat the application if necessary.
Categories of users	Professional, non-professional and industrial
Pack sizes and packaging material	Section 2.1, point 2.1.7

Table 3. Intended use 3 – **Algaecides not intended for direct application to humans or animals**

Product Type	Product type 2
Where relevant, an exact description of the authorised use	Ready-to-use solution with algaecide efficacy used as lichen and algae remover from hard surfaces: roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses.
Target organism (Test organisms)	<p>Algae (laboratory test):</p> <ul style="list-style-type: none"> <li>- <i>Pseudokirchneriella subcapitata</i>, common name: algae, development stage: NC;</li> <li>- <i>Chlorella vulgaris</i>, common name: algae, development stage: NC.</li> </ul> <p>Algae and lichen: (on-field study, the test organisms is not identified).</p>
Field of use	Outdoor
Application method(s)	Type of method: manual application: spraying, spreading, foam application, brush treatment, dip treatment, immersion. General description of the method: Use in the dry weather. Apply the product by wetting all surface. Allow the product functioning until complete drying. Do not rinse. Brush if necessary 2 days later to remove debris.

Application rate and frequency	The application rate is to fully wet all surface. Frequency: Apply once and then monitor the situation regularly. Repeat the application if necessary.
Categories of users	Professional, non-professional and industrial
Pack sizes and packaging material	Section 2.1, point 2.1.7

Table 4. Intended use 4 – **Food and feed area disinfectants (disinfectant for all washable hard surfaces)**

Product Type	Product type 4
Where relevant, an exact description of the authorised use	Ready-to-use multi-purpose disinfectant with a bactericidal, yeasticidal and virucidal efficacy against only <i>Influenza virus A/H1N1</i> for hard surfaces in domestic, institutional and industrial area.
Target organism (Test organisms)	<p>Bacteria:</p> <ul style="list-style-type: none"> <li>- <i>Pseudomonas aeruginosa</i>, common name: bacteria, aerobic, Gram-negative;</li> <li>- <i>Staphylococcus aureus</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Escherichia coli</i>, common name: bacteria, facultative anaerobic, Gram-negative;</li> <li>- <i>Enterococcus hirae</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Staphylococcus aureus methicillin-resistant</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Salmonella typhimurium</i>, common name: bacteria, facultative anaerobic, Gram-negative;</li> <li>- <i>Listeria monocytogenes</i>, common name: bacteria, facultative anaerobic, Gram-positive;</li> <li>- <i>Acinetobacter baumannii</i>, common name: bacteria, aerobic, Gram-negative;</li> <li>- <i>Legionella pneumophila</i>, common name: bacteria, aerobic, Gram-negative.</li> </ul> <p>Yeast:</p> <ul style="list-style-type: none"> <li>- <i>Candida albicans</i>, common name: yeast.</li> </ul> <p>Virus:</p> <ul style="list-style-type: none"> <li>- <i>Influenza virus A/H1N1</i>, common name: virus.</li> </ul>
Field of use	Indoor, outdoor
Application method(s)	<p>Type of method: manual application: spraying, spreading, foam application, brush treatment, dip treatment, immersion.</p> <p>General description of the method: Apply the product by fully wetting all surface for 5 minutes. Rub or brush if necessary. Rinse thoroughly with clean water.</p>
Application rate and frequency	The application rate is to fully wet all surface. Frequency: Apply once. Repeat the application if necessary.
Categories of users	Professional, non-professional and industrial
Pack sizes and packaging material	Section 2.1, point 2.1.7

## 2.2.2 Physical, chemical and technical properties

Biocidal product family "SALVESAFE A" is a family of water-based ready for use formulations. The physico-chemical data are shown in the below following table.

The Applicant submitted accelerated storage stability test for the biocidal product with minimal Lactic acid concentration (0.32% w/w) in the commercial packaging (500 mL, HDPE Bottle). The sample had been storage at 40°C during 4 months (Analytical Report No. 2013-12-CJ2). In additional, test reports on the yeasticidal and bactericidal efficacy after the storage at 40°C during 13 months of diluted dummy biocidal product that is relevant to notified biocidal product "SALVESAFE A21M" with minimal Lactic acid concentration (0.32% w/w) has been submitted by Applicant (SALVECO CIPAC MT 46.3 test report). Both approaches used in order to simulate an accelerated storage according CIPAC MT 46.3. Latvian CA considers that the outcome of the mentioned studies provide sufficient evidence that biocidal product within family "SALVESAFE A" is stable for 24 months at ambient temperature. The results of the long term study (2 years) at ambient temperature will be submitted to Latvian CA once this study will be finalised.

Property	Guideline and Method	Purity of the test substance (% (w/w))	Results	Reference
Physical state at 20 °C and 101.3 kPa	Visual	Biocidal product family "SALVESAFE A" with 0.32-1.76% w/w Lactic acid	Liquid	Confidential PAR
Colour at 20 °C and 101.3 kPa	Visual	Biocidal products family "SALVESAFE A" with 0.32-1.76% w/w Lactic acid	Colorless to light yellow	Confidential PAR
Acidity / alkalinity at 20 °C	CIPAC MT 75.3	Biocidal products family "SALVESAFE A" with 0.32-1.76% w/w Lactic acid	2.0<pH<3.5	Confidential PAR
Relative density / bulk density at 20 °C	EEC Method A3	Biocidal products family "SALVESAFE A" with 0.32-1.76% w/w Lactic acid	1.000≤density≤1.009	Confidential PAR
Storage stability test – <b>accelerated storage</b>	Storage for 4 months at 40°C (simulation an CIPAC MT46.3)	Biocidal product with 0.32% w/w Lactic acid is used. The storage stability tests are conducted in commercial packaging (500 mL, HDPE bottle). For the detection and identification of the active substance Lactic acid HPLC methods is used.	Lactic acid content at start 0.32% w/w, at the end 0.31% w/w. STD Dev=0.008% RSD=2.6% Accuracy= 2.8%	Confidential PAR
Storage stability test – <b>long term storage at ambient temperature</b>	The results of the long term study at ambient temperature will be submitted to Latvian CA once this study will be finalised.			
Storage stability test – <b>low temperature stability test</b>	The Applicant provided reports on tests performed for 3 months at 4°C±1°C for all biocidal products within family. No separation observed following storage at mentioned conditions. However, the test does not performed according to CIPAC MT 39.3 at 0±2°C at 7 days. The condition on storage "Avoid cold and			

Property	Guideline and Method	Purity of the test substance (% (w/w))	Results	Reference
<b>for liquids</b>	frost" must be indicated on the label.			
Wettability	Not applicable since the biocidal products are liquid			
Suspensibility, spontaneity and dispersion stability	Not applicable since the biocidal products are liquid			
Wet sieve analysis and dry sieve test	Not applicable since the biocidal products are liquid			
Emulsifiability, re-emulsifiability and emulsion stability	Not applicable since the biocidal products are liquid			
Particle size distribution, content of dust/fines, attrition, friability	Not applicable since the biocidal products are liquid.			
Persistent foaming	Not conducted as the biocidal products are water based			
Flowability/Pourability/Dustability	Not conducted as the biocidal products are water based.			
Burning rate — smoke generators	Not conducted as the biocidal products are water based.			
Burning completeness — smoke generators	Not conducted as the biocidal products are water based.			
Composition of smoke — smoke generators	Not conducted as the biocidal products are water based.			
Physical compatibility	Not applicable. The biocidal products are not used together with other substances or mixtures.			
Chemical compatibility	Not applicable. The products are not used together with other products.			
Degree of dissolution and dilution stability	The products are ready-to-use liquids.			
Surface tension	Not conducted as the biocidal products are water based and the Applicant submitted a viscosity value which shows that the products do not need to be classified with respect to aspiration hazard.			
Viscosity	OECD 114	Biocidal products family "SALVESAFE A" with 0.32-1.76% w/w Lactic acid	<360 mPa·s	Confidential PAR

### **Conclusion on the physical, chemical and technical properties of the product**

Latvian CA accepts that physico-chemical properties is without the risk envelope. Based on the accelerated storage data generated by the Applicant the test reports results show that biocidal product family "SALVESAFE A" will be stable for two years at ambient temperature. The condition on storage "Avoid cold and frost" must be indicated on the label.

### 2.2.3 Physical hazards and respective characteristics

#### **Conclusion on the physical hazards and respective characteristics of the product**

The Applicant has indicated that neither the active substance – Lactic acid nor the co-formulants of the biocidal product family "SALVESAFE A" exhibit any hazardous physico-chemical properties. The biocidal products within family "SALVESAFE A" are water-based ready-to-use liquids, are not flammable and are not expected to have any explosive or oxidising properties. Latvian CA agrees that no classification and labelling for physico-chemical hazards is required for biocidal product family "SALVESAFE A".

### 2.2.4 Methods for detection and identification

#### **Conclusion on the methods for detection and identification of the product**

Analytical method for the determination of Lactic acid and co-formulants residues in body and animals fluids and tissues, environmental media (soil, air, water) and also treated food or feeding have not been submitted since the Applicant has indicated that these points are not relevant for the biocidal product family "SALVESAFE A". Latvian CA accepts this approach, based on the following points:

1. Lactic acid is a naturally occurring alpha-hydroxy acid. Lactic acid is normally found in the blood and interstitial fluid of humans at a level of 10 mg/dl (U.S. EPA, 2008). Lactic acid and co-formulants are not classified as toxic or very toxic, analytical methods in body fluids and tissues are not required.
2. Lactic acid approved for use as a food additive (E270) according Regulation (EU) No. 1333/2008. Lactic acid meets the specifications for purity laid down in Regulation (EU) No. 231/2012. Lactic acid is present in a variety of foods, like yogurt containing 9 g/kg (Simpson BK., 2012), traditional cheese with 8 g/kg (Dolci P., 2008) and beef meat with a content of 1.4-5.0 g/kg (Nassos PS., 1988). Lactate is an endogenous substance (in carbohydrate and amino acid metabolism) and a natural component of very many foods, in particular fruits and fermented milk products. Lactic acid also occurs naturally in meats, fruits, tomato juice, beer, wine, molasses, blood and muscles of animals, and in the soil. Lactic acid has been approved in the EU as a food additive without an ADI or upper limit (Directive 95/2/EC), as a cosmetics ingredient, and as veterinary medicinal product without the requirement for MRL setting (EMA 2008). In 2011, the European Food Safety Authority (EFSA) delivered its agreement for the approval of lactic acid for uses to reduce microbial contamination of beef hides, carcasses, cuts and trimmings. More specifically, the approval was sought for treatments using lactic acid solution concentrations from 2% to 5% (w/w) at temperature of up to 55°C applied either by spraying or misting : "Considering the expected low level of exposure deriving from the use of Lactic acid in carcasses, cuts and trimmings and the fact that it is an endogenous substance, it was concluded that the treatments, as described, will be of no safety concern, provided the substance used complies with the European Union specifications for food additives" (EFSA, 2011). According to the above mentioned, residues determination in food of plant and animal origin is not relevant.  
However, the Applicant provided the results on residues of Lactic acid and co-formulants based on calculation method considering the maximal content of Lactic acid and co-formulants as a "worst" case" (SALVECO Product assessment Report, Section 10.5) as additional supporting information. Latvian CA agrees with outcome of the calculation method and at the same time, ADI and exposure level for Lactic acid is not limited.
3. Lactic acid also occurs naturally in the soil. Furthermore, Lactic acid is ubiquitous in the environment from natural and man-made sources making it impossible to determine the exact source. According to it, residues determination in air, water, soil are not considered to be relevant.

### 2.2.5 Efficacy against target organisms

Information on effectiveness against target organisms submitted for the biocidal products within family "SALVESAFE A" is evaluated and the results are summarised in Section 3.2 of the Annex I of the confidential PAR.

The biocidal product family "SALVESAFE A" is developed based on Lactic acid (concentration range 0.32-1.76% w/w), as an active substance which provides efficacy of the biocidal products.

The efficacy studies on bactericidal and yeasticidal claim for Product type 1 had been performed for biocidal products with 1.75% w/w Lactic acid concentration.

The efficacy studies on bactericidal and yeasticidal claim for Product type 2 and 4 had been performed for biocidal products with minimal concentration of Lactic acid (0.32% w/w).

The efficacy studies on virucidal claim against *Influenza virus A/H1N1* had been performed for biocidal products with 0.42% w/w and 1.75% w/w content of Lactic acid for Product types 2 and 4 and Product type 1, respectively.

The algaecide claim had been supported by studies using biocidal product with 1.69% w/w content of Lactic acid.

The information on biocidal products trade name's indicated in test reports and relevant trade name's within authorised biocidal product family are pointed out in Section 3.5. of the Annex I of the confidential PAR.

Efficacy studies for Product type 1, Product type 2 and Product type 4 had been performed without presence of "potential active" substance. Taking into account above mentioned, as well as, the wide use of "potential active" substance in cosmetic and detergents industry, Latvian CA considers that "potential active" substance should not be considered as "active" substance within authorised biocidal product family "SALVESAFE A". Nevertheless, Applicant submitted the additional test report on "potential active" substance efficacy (Masternak A., Hisiger S., 2014) that shows no effect on target organisms at concentrations including maximum concentration really used within family "SALVESAFE A"<sup>3</sup>.

It was shown that the proposed functions for tested disinfectant products within family "SALVESAFE A" are claimed as bactericide and yeasticide, as well as virucide against only *Influenza virus A/H1N1* and algaecide. The tested disinfectant products represent a number of types of efficacy that are supported by results of bactericidal, yeasticidal, virucidal and algaecidal tests appropriate to the area of application (PT 1, PT 2, PT 4) and are evaluated as effective against a range of *Gram positive* and *Gram negative bacteria*, including strains with pathogenic characteristic, yeast strain *Candida albicans*, specific *Influenza virus A/H1N1* type and two unicellular green *algae* species.

The choice of reference micro-organisms for testing is relevant, since the use of only one organism per test is limited and may not be fully representative. In current efficacy tests for products family "SALVESAFE A" bacterial strains and yeast strain used as test-organisms were selected from reference target organisms in the Table of Reference Organisms (CA-May13-Doc.6.2.b – Guidance document on the evaluation of efficacy of disinfectants PT2) and in accordance with Standard EN 14885 – Chemical disinfectants and antiseptics – application of European Standards for chemical disinfectants and antiseptics.

The *Influenza virus A/H1N1* was selected and used as "model enveloped strain" (specifically the Test Laboratory choice) and as a common worldwide representative virus causing pandemic annually. Whereas it has not been reference organism according

---

<sup>3</sup> Described in confidential PAR

to EN 14476, Applicant supports virucidal claim only against this one specific strain and does not cover the general virucidal claim.

The two unicellular green algae species were selected as test-organisms: *Pseudokirchneriella subcapitata* CCAP278/2 and *Chlorella vulgaris* CCAP211/118 both originating from SAMS Research Services Ltd, Scotland. Latvian CA has opinion that these algae strains were selected based on scientific evidence.

The efficacy testing of products within family "SALVESAFE A" is provided by using EN standards methodology. The used Standards based on laboratory suspension tests (phase 2, step 1) or tests (phase 2, step 2) simulating practical conditions are appropriate to its intended use (temperature, soiling, contact time, concentrations, etc.) to support claims for evaluation of antimicrobial activity and label claims for family "SALVESAFE A". Some of Standard methods (as Intern method, SOP) are accepted as appropriate to its use for the efficacy evaluation of biocidal products against algae. The following Standards were used:

- EN 1275:2006 – Quantitative suspension test for the evaluation of basic fungicidal activity of chemical disinfectants (phase 2, step 1);
- EN 1276:2010 - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas (phase 2, step 1);
- EN 1650:2008 – Quantitative suspension test for the evaluation of fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas (phase 2, step 1);
- EN 1650:2010 –Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas (phase 2, step 1);
- EN 14476:2013 – Quantitative suspension test for the evaluation of virucidal activity in the medical area (phase 2, step 1);
- EN 13697:2001 – Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas (phase 2, step 2).
- EN 1499:2013 – Chemical disinfectants and antiseptics – Hygienic handwash (phase 2, step 2);
- EN 13624:2013 - Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity in the medical area (phase 2, step 1);
- EN 13727:2013 - Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of bactericidal activity in the medical area (phase 2, step 1).

For all intended uses and reference target organisms, efficacy has been successfully demonstrated for products within family "SALVESAFE A". Full details of the test conditions and test results are provided. In addition appropriate observations and recording of changes that affect population of target organisms (for algae species) are reported and methods of recording the effect are given.

There are three main groups of the biocidal products were tested on efficacy:

- 1) Product type 1 - cleaner and disinfectants for hands;
- 2) Product type 2 and Product type 4 – hard surface disinfectants and
- 3) Product type 2 – algaecide.

#### 2.2.5.1 Function and field of use

All biocidal products within family "SALVESAFE A" are ready-to-use solutions. The overall domestic, industrial and institutional area of use is:

- disinfectants for hands (Product type 1);
- disinfectants for all washable hard surfaces not intended for direct application to humans or animals and disinfectants for all washable hard surfaces in food and feed area (Product type 2 and 4) and
- algaecide for outdoor hard surfaces such as roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses (Product type 2).

**Product type 1** indicated for human hygiene as cleaner and disinfectant for hands. Ready-to-use solution used as disinfectant for hands with a bactericidal, yeasticidal and virucidal action against only *Influenza virus A/H1N1*. The effectiveness is provided by Laboratory efficacy test reports according to European standards.

**Product type 2** is indicated as multi-purpose disinfectant for all washable hard surfaces: houses, nursing homes, kindergartens, industrial premises and technical services, floors, rooms, furniture, toilets, bathrooms, worktops, garbage containers and not intended for direct application to humans or animals and without contact with food. Biocidal products within family "SALVESAFE A" are manufactured for use as disinfectants with bactericidal, yeasticidal, virucidal action against only *Influenza virus A/H1N1*. The effectiveness is provided by Laboratory efficacy test reports according to European Standards.

**Product type 2** is indicated as ready-to-use solution with algaecide efficacy used as lichen and algae remover from hard surfaces: roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses. Biocidal product within family "SALVESAFE A" is manufactured for use as algaecide. The effectiveness is provided by Laboratory test report and on-field study.

**Product type 4** is indicated as multi-purpose disinfectants for all washable hard surfaces: houses, nursing homes, kindergartens, industrial premises and technical services, floors, rooms, furniture, kitchens, worktops. The products can be used on surfaces in contact with food (from production premise/equipment to storage premises/equipment). Biocidal products within family "SALVESAFE A" are manufactured for use as disinfectants with bactericidal, yeasticidal, virucidal action against only *Influenza virus A/H1N1*. The effectiveness is provided by Laboratory efficacy test reports according to European standards.

The harmonisation of relevant biocidal products within family "SALVESAFE A" and product types is indicated in Section 2.1.1.1.1.

#### 2.2.5.2 Effects on target organisms, including unacceptable suffering

##### **Product type 1 - Disinfectants for human hygiene (disinfectants for hands)**

The efficacy studies on bactericidal, yeasticidal claim and virucidal claim against only *Influenza virus A/H1N1* for Product type 1 had been performed for biocidal product with 1.75% w/w Lactic acid concentration.

The results of the efficacy studies are summarized in Tables 3.1-3.4 in Section 3.2 of the Annex I of the confidential PAR, as well as, in below following Table 2.1 under the point 2.2.5.4 within this Section.

The information on biocidal products trade name's indicated in test reports and relevant trade name's within authorised biocidal product family are pointed out in Section 3.5. of the Annex I of the confidential PAR.



**The biocidal product Salvesafe Soap (relevant to SALVESAFE A28M)** represents a biocidal product family "SALVESAFE A" with claimed intended use PT 1 – hands disinfectant.

The hand disinfectant was tested according to the **EN 1499:2013** (method dilution-neutralization), phase 2, step 2; Hygienic hand washing.

The test was performed to find out bactericidal efficacy against *Escherichia coli* K12 strain according to the following experimental conditions:

Reference procedure	Hand washing for 60 seconds 5 ml soft soap
Procedure with the product tested	Hand washing for 30 seconds 3 ml tested product

A negative difference between reduction factor of reference and tested product indicates that product tested is more effective compared with soft soap. According to the Wilcoxon-Wilcox statistical test at the required probability level of  $p=0.01$  this difference is considered significant.

*Therefore, the product Salvesafe Soap that is relevant to SALVESAFE A28M (Lactic acid concentration 1.75% w/w), used for hand washing for 30 seconds, under a volume of 3 ml has an activity according to claimed Standard and intended use.*

**The biocidal product Salvesafe Soap X10 (relevant to SALVESAFE A28M)** represents the biocidal product family "SALVESAFE A" with claimed intended use PT 1 – hands disinfectant. This hands disinfectant was tested in a quantitative suspension test according to the **EN 13727:2013** (method dilution-neutralization) on bactericidal efficacy against four reference strains:

*Escherichia coli* K12 NCTC10538;  
*Pseudomonas aeruginosa* ATCC 15442;  
*Enterococcus hirae* ATCC 10541 and  
*Staphylococcus aureus* ATCC 6538.

Tested concentrations ( $\geq 25\%$ ) of the product under dirty conditions (BSA 3 g/l + sheep erythrocytes 3ml/l) at 20°C and exposure time 30 sec possesses bactericidal efficacy. The bactericidal infectivity reduction factor overpass  $> 5 \log$  (required  $\geq 3$ ).

*Therefore, the biocidal product Salvesafe Soap X10 that is relevant to biocidal product SALVESAFE A28M with 1.75% w/w concentration of Lactic acid within family "SALVESAFE A" is a disinfectant with a bactericidal activity under defined test conditions and exposure 30 sec according to claimed Standard and intended use.*

**The biocidal product Salvesafe Soap X10 (relevant to SALVESAFE A28M)** represents the biocidal product family "SALVESAFE A" with claimed intended use PT 1 – hands disinfectant. This hands disinfectant was tested in a quantitative suspension test according to the **EN 13624:2013** (method dilution-neutralization) on yeasticidal efficacy against one reference strain:

*Candida albicans* ATCC 10231.

Tested concentrations ( $\geq 25\%$ ) of the product under dirty conditions (BSA 3 g/l + sheep erythrocytes 3ml/l) at 20°C and exposure time 30 sec possesses yeasticidal efficacy. The yeasticidal infectivity reduction factor overpass  $> 4 \log$  (required  $\geq 2$ ).

Therefore, the biocidal product Salvesafe Soap X10 that is relevant to biocidal product SALVESAFE A28M with 1.75% w/w concentration of Lactic acid within family "SALVESAFE A" is a disinfectant with a yeasticidal activity under defined test conditions and exposure 30 sec according to claimed Standard and intended use.

**The biocidal product Salvesafe Soap (relevant to SALVESAFE A28M)** represents the biocidal product family "SALVESAFE A" with claimed intended use PT 1 – hands disinfectant. This hands disinfectant was tested in a quantitative suspension test according to the **EN 1276:2010** (method dilution-neutralization) on bactericidal efficacy against four reference strains:

*Escherichia coli* ATCC 10536;  
*Pseudomonas aeruginosa* ATCC 15442;  
*Enterococcus hirae* ATCC 10541 and  
*Staphylococcus aureus* ATCC 6538.

Tested concentrations ( $\geq 80\%$ ) of the product under dirty conditions (BSA 3 g/l) at 20°C and exposure time 30 sec possesses bactericidal efficacy. The bactericidal infectivity reduction factor overpass  $> 5$  log (required  $\geq 5$ ).

Therefore, the biocidal product Salvesafe Soap that is relevant to biocidal product SALVESAFE A28M with 1.75% w/w concentration of Lactic acid within family "SALVESAFE A" is a disinfectant with a bactericidal activity under defined test conditions and exposure 30 sec according to claimed Standard and intended use.

**The biocidal product Salvesafe Soap (relevant to SALVESAFE A28M)** represents the biocidal product family "SALVESAFE A" with claimed intended use PT 1 – hands disinfectant. This hands disinfectant was tested in a quantitative suspension test according to the **EN 1650:2013** (method dilution-neutralization) on yeasticidal efficacy against one reference strain:

*Candida albicans* ATCC 10231.

Tested concentrations ( $\geq 80\%$ ) of the product under dirty conditions (BSA 3 g/l) at 20°C and exposure time 30 sec possesses yeasticidal efficacy. The yeasticidal infectivity reduction factor overpass  $> 4$  log (required  $\geq 4$ ).

Therefore, the biocidal product Salvesafe Soap that is relevant to biocidal product SALVESAFE A28M with 1.75% w/w concentration of Lactic acid within family "SALVESAFE A" is a disinfectant with a yeasticidal activity under defined test conditions and exposure 30 sec according to claimed Standard and intended use.

**The biocidal product Salvesafe Soap X10 (relevant to SALVESAFE A28M)** represents the product family "SALVESAFE A" with claimed intended use PT 1 – hands disinfectant. The disinfectant was tested in a quantitative suspension test according to the **EN 14476:2013** on virucidal efficacy against "model viruses" *Influenza virus A/H1N1* (Brisbane/59/2007 Novartis Vaccines and Diagnostics GmbH &Co).

The efficacy test was performed under dirty conditions BSA 3 g/l + sheep erythrocytes 3 ml/l as interfering substance, at the product concentration 0.5%, 20%, 40% and 80% at 20°C and exposure time 30 sec. Tested product demonstrated the sufficient virucidal activity against *Influenza virus A/H1N1* at concentration 20% under defined test conditions. The virucidal infectivity reduction factor pass log  $> 4$  (required  $\geq 4$ ) at the concentration  $\geq 20\%$ .

It is necessary note, that the efficacy is assessed directly in relation to this *Influenza virus A/H1N1* and cannot be extended to all types of viruses (enveloped and non-enveloped).

Therefore, the biocidal product *Salvesafe Soap X10* that is relevant to biocidal product *SALVESAFE A28M* with concentration of Lactic acid 1.75% w/w within family "SALVESAFE A" has a sufficient virucidal activity just only against specific target virus strain *Influenza virus A/H1N1* under the defined test conditions and exposure time 30 sec according to Standard and claimed intended use.

**Product type 2 and Product type 4 - Disinfectants not intended for direct application to humans or animals and food and feed area disinfectants (Disinfectants for all washable hard surfaces)**

The efficacy studies on bactericidal and yeasticidal claim for Product type 2 and 4 had been performed for biocidal products with minimal concentration of Lactic acid (0.32% w/w).

The efficacy studies on virucidal claim against *Influenza virus A/H1N1* had been performed for biocidal product with 0.42% w/w content of Lactic acid.

The results of the efficacy studies are summarized in Tables 3.5-3.8 in Section 3.2 of the Annex I of the confidential PAR, as well as, in below following Table 2.1 under the point 2.2.5.4 within this Section.

The information on biocidal products trade name's indicated in test reports and relevant trade name's within authorised biocidal product family are pointed out in Section 3.5. of the Annex I of the confidential PAR.

***Biocidal product Nettoyant désinfectant TS 3% (relevant to SALVESAFE A21M)***, represents product family "SALVESAFE A" with claimed intended use PT 2 and PT 4 - surface disinfectants.

This disinfectant is tested on bactericidal efficacy in the quantitative suspended test against 4 reference target organisms:

*Staphylococcus aureus* ATCC 6538;  
*Pseudomonas aeruginosa* ATCC 15442;  
*Enterococcus hirae* ATCC 10541 and  
*Echerichia coli* ATCC 10536.

According to the **EN 1276:2010** standard the product demonstrated a bactericidal activity from the concentration 70% and 80% against the 4 reference strains of bacteria under dirty conditions (BSA 3 g/l) at 20°C and 5 min of exposure time. The bacterial infectivity reduction factor overpass > 5 log (required ≥ 5).

This disinfectant is tested on yeasticidal efficacy in the quantitative suspended test against one reference target organism:

*Candida albicans* ATCC 10231.

According to the **EN 1275:2006** standard the product demonstrated a yeasticidal activity from the concentration 70% and 80% against the strain of yeast *Candida albicans* under dirty conditions (BSA 3 g/l) at 20°C and 5 min of exposure time. The yeasticidal infectivity reduction factor pass > 4 log (required ≥ 4).

The mentioned product is tested on bactericidal and yeasticidal efficacy in the non-porous surface test against following reference target organisms:

*Staphylococcus aureus* ATCC 6538;  
*Pseudomonas aeruginosa* ATCC 15442;  
*Enterococcus hirae* ATCC 10541;  
*Echerichia coli* ATCC 10536 and

*Candida albicans* ATCC 10231.

According to the **EN 13697:2001** the product demonstrated a bactericidal activity from the concentration of 80% against the 4 reference strains of bacteria under dirty conditions (BSA 3 g/l) at 20°C and 5 min of exposure time. The bactericidal infectivity reduction factor pass > 4 log (required ≥ 4). Also this product demonstrated yeasticidal activity from the concentration 80% against the yeast strain under dirty conditions (BSA 3 g/l) at 20°C and 5 min of exposure time. The yeasticidal infectivity reduction factor pass > 3 log (required ≥ 3).

Therefore, the biocidal product *Nettoyant désinfectant TS 3%* that is relevant to biocidal product *SALVESAFE A21M* with minimal concentration of Lactic acid (0.32% w/w) within family "SALVESAFE A" is a disinfectant with a sufficiently high bactericidal and yeasticidal activity against the reference strains and under defined test conditions and exposure time 5 min according to claimed Standards and intended use.

**The biocidal product B36 diluted to 1.5% (relevant to SALVESAFE A21M)** represents product family "SALVESAFE A" with claimed intended use PT 2 and PT 4 – surface disinfectants.

This disinfectant is tested in the quantitative suspended test on bactericidal efficacy against additional target organisms (origin: Institute Pasteur, line ATCC).

*Listeria monocytogenes* CIP 100607;  
*Salmonella enterica* serovar *typhimurium* CIP 58.58;  
*Methicillin resistant Staphylococcus aureus* CIP 103514;  
*Acinetobacter baumannii* CIP 70.34;  
*Legionella pneumophila* CIP 103854.

It should be noted that, in the case of large-scale use of disinfectant, it may be necessary to evaluate the sensitivity of bacterial species causing nosocomial infections. These species often different from the proposed reference species. As in this case the target bacteria selected from other international collections (CIP, Institute Pasteur) is accepted.

According to the **EN 1276:2010** standard, the product demonstrated a bactericidal activity from the concentration 0.9% and 1% against the 4 reference strains of bacteria and concentration 1% against the *Legionella pneumophila* under dirty conditions (BSA 3 g/l) at 20°C and 5 min of exposure time. The bacterial infectivity reduction factor > 5 log (required ≥ 5).

This disinfectant is tested in the quantitative suspended test on yeasticidal efficacy against one reference target organism:

*Candida albicans* ATCC 10231.

According to the **EN 1650:2008** standard, the product demonstrated a yeasticidal activity from the concentration 1% against the strain of and *Candida albicans* under dirty conditions (BSA 3 g/l) at 20°C and 5 min of exposure time. The yeasticidal infectivity reduction factor > 4 log (required ≥ 4).

Therefore, the biocidal product *B36 diluted to 1.5%* that is relevant to biocidal product *SALVESAFE A21M* with minimal concentration of Lactic acid (0.32% w/w) within family "SALVESAFE A" is a disinfectant with a sufficiently high bactericidal and yeasticidal

activity under defined test conditions and exposure time 5 min according Standard and claimed intended use.

**The biocidal product Cleaner Disinfectant Spray (relevant to SALVESAFE A30M)** represents the product family "SALVESAFE A" with claimed intended use PT 2 and PT 4 – surface disinfectants. This disinfectant was tested in a suspension test according to the DIN **EN 14476:2013** on virucidal efficacy against "model viruses" *Influenza virus A/H1N1* (Brisbane/59/2007 Novartis Vaccines and Diagnostics GmbH&Co.KG).

The efficacy test was performed under dirty conditions (3.0 g/l BSA + 3.0 ml/l erythrocytes as interfering substance), in product concentration of 0.5%, 20%, 40% and 80% at 20°C and exposure time 5 minutes. The virucidal activity against *Influenza virus A/H1N1* of biocidal product was determined by the difference of the logarithmic titre of the virus control minus the logarithmic titre of the test virus. Tested product demonstrated the sufficient virucidal activity against *Influenza virus A/H1N1* at concentration 20% under defined test conditions. The virucidal infectivity reduction factor pass  $\log > 5$  (required  $\geq 4$ ).

It is necessary note, that the efficacy is assessed directly in relation to *Influenza virus A/H1N1* and cannot be extended to all types of viruses (enveloped and non-enveloped).

*Therefore, the biocidal product Cleaner Disinfectant Spray that is relevant to biocidal product SALVESAFE A30M with concentration of Lactic acid 0.42% w/w within family "SALVESAFE A" is a sufficient biocidal activity just only against specific target virus strain Influenza virus A/H1N1 under the defined test conditions and exposure time 5 min according to Standard and claimed intended use.*

### **Product type 2 - Algaecides not intended for direct application to humans or animals**

The algaecide claim had been supported by studies using biocidal product with 1.69% w/w content of Lactic acid.

The results of the efficacy study are summarized in Table 3.9 in Section 3.2 of the Annex I of the confidential PAR, as well as, in below following Table 2.1 under the point 2.2.5.4 within this Section.

The information on biocidal products trade name's indicated in test reports and relevant trade name's within authorised biocidal product family are pointed out in Section 3.5. of the Annex I of the confidential PAR.

**The biocidal product Antimoss RTU (or Nettoyant Antimousse Prêt-à-l'emploi that is relevant to SALVESAFE A27M)** represents family "SALVESAFE A" with claimed intended use PT 2 - algaecide. The biocidal product is tested on algaecide efficacy against two unicellular green algae species: *Pseudokirchneriella subcapitata* CCAP278/2 and *Chlorella vulgaris* CCAP211/118 both from origin SAMS Research Services Ltd, Scotland. The selected test species are accepted.

Due to the absence of specific methodology of EU standard that is not yet introduced, Intern method of algaecide efficiency test is performed. This trial purpose is to measure the impact of the tested product on unicellular green algae growth after 24, 48, 72 hours without changing the medium in static trial and the fluorescence inhibition percentages are calculated in comparison with control assays average. Fluorescence is the parameter used for biomass measurement. The trial conditions, test method, data processing are described. In this type of test, a control treatment without biocide is included. Fluorescence evaluation given in RFU, is measured with fluoremeter Dynex Revelation

MFx (excitation: 430 nm; emission 670 nm). The actual tested concentration equals 80% v/v of raw product.

In addition, a visual observation is done, with photography taken, that also is given valuable additional information on the efficacy of the product. According to the visual observation, algae are well developed with dark green color in the control assay and no green color was observed in the test assay with 80% product. Fluorescence analysis demonstrates an algacide effectiveness on the *Chlorella vulgaris*, with a fluorescence decrease of 95% after 48h compared to the control assay. Fluorescence analysis demonstrate an algacide effectiveness of the product Antimoss RTU on the *Pseudokirchneriella subcapitata*, with a fluorescence decrease of 98% after 48h compared to the control assay.

Applicant submitted the additional supporting on-field study as illustrative material on efficacy of the biocidal product against moss, algae and lichen. This study indicated that after treatment by spraying of roof infested with moss, downpipe infested with algae and wall infested with lichen, after 8 days the following observations are made: moss has turned yellow and it is no more stuck to the roof surface, algae on downpipe surface have turned black and lichen on wall has turned yellow and it is no more stuck to concrete surface.

*Therefore, the biocidal product Antimoss RTU (Nettoyant Antimousse Prêt-à-l'emploi), that is relevant to biocidal product SALVESAFE A27M with 1.69% w/w concentration of Lactic acid within family "SALVESAFE A" is demonstrated an algacide effectiveness with optimal exposure time 48 h.*

#### 2.2.5.3 Mode of action, including time delay

The dissociation degree of Lactic acid in solution depends on pH value. In contact of undissociated form of Lactic acid with biological material, such as micro-organisms, the Lactic acid is able to pass the cells membrane. At a relatively low pH, the Lactic acid inhibits the pathogens through the penetration of the undissociated form across the membrane which interferes with the metabolic functions of the pathogen. The decrease in the intracellular pH causes dissipation of the membrane and leads to membrane disruption. Therefore the mode of action for this product family "SALVESAFE A" is inhibition of cells grows and biomass producing and finally cells are destroyed.

The results of the efficacy tests conclusively demonstrate that the biocidal products with the concentration of Lactic acid 1.75% w/w for a 30 sec contact time reached a sufficient effectiveness and passed the target organisms (bacteria and yeast) reduction factor, as well as, for a 30 sec contact time reached a sufficient effectiveness and passed the *Influenza virus A/H1N1* reduction factor. Biocidal products with the concentration of Lactic acid  $\geq 1.75\%$  and  $\leq 1.76\%$  w/w are achieved the claimed effect proposed by the Applicant for intended use as disinfectants for hands.

The results of the efficacy tests conclusively demonstrate that the biocidal products with the concentration of Lactic acid 0.32% w/w for a 5 min contact time reached a sufficient effectiveness and passed the target organisms (bacteria and yeast) reduction factor, and with the concentration of Lactic acid 0.42% w/w reached a sufficient effectiveness against one viruses (only *Influenza virus A/H1N1*). Biocidal products with the concentration of Lactic acid  $\geq 0.32\%$  (0.42% for *Influenza virus A/H1N1*) and  $\leq 1.76\%$  w/w are achieved the claimed effect proposed by the Applicant for intended use as disinfectants for all washable hard surfaces not intended for direct application to humans or animals and disinfectants for all washable hard surfaces in food and feed area.

The results of the visual observation conclusively demonstrate that the biocidal product with concentration of Lactic acid  $\geq 1.69\%$  and  $\leq 1.76\%$  w/w for a 48 h contact time

reached a sufficient effectiveness against lichen and algae and achieved the claimed effect proposed by the Applicant for intended use as algaecide for outdoor hard surfaces such as roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses.

CONFIDENTIAL

## 2.2.5.4 Efficacy data

Table 2.1. Experimental data on the efficacy of the tested biocidal products against target organisms for supporting of the family

Function	Field of use	Test product	Test organisms	Test method	Test system / concentrations applied / exposure time	Test results: effects	Reference
<b>Product type 1</b>							
Bactericide	Cleaner and disinfectant for hands	Salvesafe Soap	<i>Escherichia coli</i> K12 NCTC 10538	EU 1499:2013 (phase 2, step 2); method dilution-neutralization	Reference procedure: Hand washing for 60 seconds 5 ml soft soap; Procedure with the product tested: Hand washing for 30 seconds 3 ml product.	Tested product demonstrated the bactericidal activity (exceeding that of the reference soft soap) in defined test conditions	Confidential PAR
Bactericide	Cleaner and disinfectant for hands	Salvesafe Soap X10	<i>Escherichia coli</i> K12 NCTC 10538; <i>Pseudomonas aeruginosa</i> ATCC 15442; <i>Enterococcus hirae</i> ATCC 10541; <i>Staphylococcus aureus</i> ATCC 6538	EN 13727:2013; (phase 2, step 1) Test method: dilution-neutralization; Quantitative suspension test	Tested product concentrations: 50%, 25% , 5%; contact times 30 seconds; dirty conditions with interfering substance: BSA 3 g/l + sheep erythrocytes 3ml/l; test temperature 20°C ± 1°C	Tested product demonstrated the bactericidal activity at concentrations of ≥ 25% in defined conditions (pass R > 5 log)	Confidential PAR
Yeasticide	Cleaner and disinfectant for hands	Salvesafe Soap X10	<i>Candida albicans</i> ATCC 10231	EN 13624:2013; (phase 2, step 1) Test method: dilution-neutralization; Quantitative suspension test	Tested product concentrations: 50%, 25% , 5%; contact times 30 seconds; dirty conditions with interfering substance: BSA 3 g/l + sheep erythrocytes 3ml/l; test temperature 20°C ± 1°C	Tested product demonstrated the yeasticidal activity in defined conditions (pass R > 4 log)	Confidential PAR
Bactericide	Cleaner and disinfectant for hands	Salvesafe Soap	<i>Escherichia coli</i> ATCC 10536; <i>Pseudomonas aeruginosa</i> ATCC 15442; <i>Enterococcus hirae</i> ATCC 10541; <i>Staphylococcus aureus</i> ATCC 6538	EN 1276:2010; (phase 2, step 1) Test method: dilution-neutralization; Quantitative suspension test	Tested product concentrations: 80%, 70% , 10%; contact times 30 seconds; dirty conditions with interfering substance: BSA 3 g/l; test temperature 20°C ± 1°C	Tested product demonstrated the bactericidal activity at concentrations of ≥ 80% in defined conditions (pass R > 5 log)	Confidential PAR



Function	Field of use	Test product	Test organisms	Test method	Test system / concentrations applied / exposure time	Test results: effects	Reference
Yeasticide	Cleaner and disinfectant for hands	Salvesafe Soap	<i>Candida albicans</i> ATCC 10231	EN 1650:2013; (phase 2, step 1) Test method: dilution-neutralization; Quantitative suspension test	Tested product concentrations: 80%, 50%, 25%, 1%; contact times 30 seconds; dirty conditions with interfering substance: BSA 3 g/l; test temperature 20°C ± 1°C	Tested product demonstrated the yeasticidal activity at concentrations of ≥ 80% in defined conditions (pass R > 4 log)	Confidential PAR
Virucide	Cleaner and disinfectant for hands	Salvesafe Soap X10	<i>Influenza virus A/H1N1</i>	EN 14476:2013/Fp rA1:2015 (phase 2, step 1) Quantitative suspension test	Tested product concentrations of the product: 80%, 40%, 20%, 0.5%; dirty conditions: BSA 3 g/l + sheep erythrocytes 3ml/l; exposure time: 30 seconds; test temperature 20°C ± 1°C	Tested product demonstrated the virucidal activity at concentrations of ≥ 20% in defined test conditions (pass R > 4 log)	Confidential PAR
<b>Product type 2 and 4</b>							
Bactericide	Surfaces	Nettoyant Désinfectant TS 3%	<i>Staphylococcus aureus</i> ATCC 6538; <i>Echerichia coli</i> ATCC 10536; <i>Pseudomonas aeruginosa</i> ATCC 15442; <i>Enterococcus hirae</i> ATCC 10541	EN 1276:2010; (phase 2, step 1); Method: dilution-neutralization; Quantitative suspension test	Dirty conditions: BSA 3 g/l; concentrations of the product: 80%, 70%, 50%; exposure time: 5 minute; temperature during the assays 20°C ± 1°C	Tested product demonstrated the bactericidal activity from concentrations 70% and 80% in defined test conditions; pass the reduction criteria R > 5 log	Confidential PAR
Yeasticide	Surfaces	Nettoyant Désinfectant TS 3%	<i>Candida albicans</i> ATCC 10231	EN 1275:2006; (phase 2, step 1); Method: dilution-neutralization; Quantitative suspension test	Dirty conditions: BSA 3 g/l; concentrations of the product: 80%, 70%, 50%; exposure time: 5 minute; temperature during the assays 20°C ± 1°C	Tested product demonstrated the yeasticidal activity from concentrations 70% and 80% in defined test conditions; pass the reduction criteria R > 4 log.	Confidential PAR

Function	Field of use	Test product	Test organisms	Test method	Test system / concentrations applied / exposure time	Test results: effects	Reference
Bactericide and yeasticide	Surfaces	Nettoyant Desinfectant TS	<p><i>Staphylococcus aureus</i> ATCC 6538;</p> <p><i>Echerichia coli</i> ATCC 10536;</p> <p><i>Pseudomonas aeruginosa</i> ATCC 15442;</p> <p><i>Enterococcus hirae</i> ATCC 10541;</p> <p><i>Candida albicans</i> ATCC 10231</p>	EN 13697:2001; phase 2, step 2; Method: dilution-neutralization; Quantitative non-porous surface test	Dirty conditions: BSA 3 g/l; concentrations of the product: 80 %, 70%, 10%; Exposure time: 5 minute; Temperature during the assays 20°C ± 1°C	<p>Tested product demonstrated the bactericidal activity from concentration 80% in defined test conditions; pass reduction criteria R &gt; 4 log.</p> <p>Tested product demonstrated the yeasticidal activity from concentration 80% in defined test conditions; pass the reduction criteria R &gt; 3 log.</p>	Confidential PAR
Bactericide	Surfaces	B36 product diluted to 1.5%	<p><i>Legionella pneumophila</i> subsp. <i>pneumophila</i> (CIP103854);</p> <p><i>Listeria monocytogenes</i> (CIP 100607);</p> <p><i>Salmonella enterica</i> subsp. <i>enterica</i> serotype <i>typhimurium</i> (CIP 58.58);</p> <p><i>Staphylococcus aureus</i> methicillin resistant (CIP 103514);</p> <p><i>Acinetobacter baumannii</i> (CIP 70.34)</p>	EN 1276:2010; phase 2, step 1; Method: dilution-neutralization; Quantative suspension test	Dirty conditions: BSA 3 g/l; concentrations of the product: 1%, 0.9 %, 0.1%; exposure time: 5 minutes; temperature during the assays 20°C ± 1°C	<p>Tested product demonstrated the bactericidal activity from the 1% solution in defined test conditions; pass the reduction criteria R &gt; 5 log</p>	Confidential PAR

Function	Field of use	Test product	Test organisms	Test method	Test system / concentrations applied / exposure time	Test results: effects	Reference
Yeasticide	Surfaces	B36 product diluted to 1.5%	<i>Candida albicans</i> ATTC 10231	EN 1650:2008; phase 2, step 1; Method: dilution-neutralization; Quantitative suspension test	Dirty conditions: BSA 3 g/l; Final concentrations of the product: 1%, 0.75 % and 0,1%; Exposure time: 5 minutes; Temperature during the assays 20°C ± 1°C	Tested product demonstrated the yeasticidal activity from concentration of 1% at 20°C; pass reduction criteria R > 4 log.	Confidential PAR
Virucide	Surfaces	SURE™ Cleaner Disinfectant Spray	<i>Influenza virus A /H1N1</i>	EN 14476:2013/Fp rA1:2015; phase 2, step 1; Quantitative suspension test	Dirty conditions: 3.0 g/l BSA+3.0 ml/l erythrocytes; concentrations of the product: 0.5%, 20%, 40% , 80%; exposure time: 5 minutes; temperature during the assays 20°C ± 1°C	Tested product demonstrated the virucidal activity from concentration 20% under defined test conditions; pass the reduction criteria R > 5 log	Confidential PAR
<b>Product type 2</b>							
Algaecide	Outdoor surfaces	Antimos RTU	<i>Pseudokirchneriella subcapitata</i> CCAP278/2  <i>Chorella vulgaris</i> CCAP211/118	Intern method of algaecide efficiency evaluation , ISO Test medium composition – Algae Test; Fluorescence inhibition test in static trial	Tested concentration equals 80% (v/v) of raw product; trial time 24-72 h; temperature 21-24 °C in thermostatic clamber; light: close to daylight (400-700 nm); trial volume 50 ml; aeration non; stirring continuous	Tested product demonstrated the algaecide activity as fluorescence inhibition (If) after 48h exposition in defined test conditions.	Confidential PAR

Function	Field of use	Test product	Test organisms	Test method	Test system / concentrations applied / exposure time	Test results: effects	Reference
Algaecide	Outdoor surfaces	Nettoyant Antimousse Prêt-à-l'emploi	<i>Moss, Algae and Lichen</i>	On-field study	Tested concentration 100% (v/v) of raw product; observation after 8 days; temperature 22°C; apply by spraying to wet all the surface. Without rinsing/rain.	Visual: moss has turned yellow and it is no more stuck to the roof surface, algae on downpipe surface have turned black and lichen on wall has turned yellow and it is no more stuck to concrete surface.	Confidential PAR
<b>Additional test on Citric Acid</b>							
Bactericide	Citric acid solution 50% (w/w)		<i>Staphylococcus aureus</i> ATCC 6538; <i>Echerichia coli</i> ATCC 10536; <i>Pseudomonas aeruginosa</i> ATCC 15442; <i>Enterococcus hirae</i> ATCC 10541	EN 1276:2010; phase 2, step 1 Test method: dilution-neutralization; Quantitative suspension test	Tested product concentrations: 1.6%, 1% , 0.5%, 0.2%; contact times 5 minutes +/- 10 seconds; dirty conditions with interfering substance: BSA 3 g/l; test temperature 20°C ± 1 °C	It was demonstrated that Citric acid has no bactericidal activity at concentrations 0.8%, 0.5% , 0.25 %, 0.1% (R < 5 log)	Confidential PAR

**Conclusion on the efficacy of the product**

Tested biocidal product family "SALVESAFE A" meets the bactericidal, yeasticidal, virucidal against only *Influenza virus A/H1N1* and algacide activity under the specified test conditions according to appropriate EN Standard Method. Microbiocidal effectiveness has been demonstrated with a sufficiently high coefficients of reduction factor (log R).

Product type 1 - The results of the efficacy tests conclusively demonstrate that the biocidal products with Lactic acid concentration  $\geq 1.75\%$  and  $\leq 1.76\%$  w/w for a 30 sec contact time reached a sufficient effectiveness and passed the target organisms (bacteria, yeast and virus *Influenza virus A/H1N1*) reduction factor.

Product type 2 and 4 - The results of the efficacy tests conclusively demonstrate that the biocidal product family "SALVESAFE A" with Lactic acid concentration  $\geq 0.32\%$  w/w and  $\leq 1.76\%$  w/w for a 5 min contact time reached a sufficient effectiveness and passed the target organisms (bacteria and yeast), as well as, biocidal product family "SALVESAFE A" with Lactic acid concentration  $\geq 0.42\%$  w/w and  $\leq 1.76\%$  w/w reached a sufficient effectiveness against *Influenza virus A/H1N1*.

Product type 2 -The results of the visual observation conclusively demonstrate that the biocidal products with Lactic acid concentration  $\geq 1.69\%$  w/w and  $\leq 1.76\%$  w/w for a 48 h contact time reached a sufficient effectiveness against lichen and algae for outdoor hard surfaces.

#### 2.2.5.5 Occurrence of resistance and resistance management

The efficacy of the biocidal product family "SALVESAFE A" have provided due the content of the active substance – Lactic acid. The resistance of target organisms to the biocidal product family "SALVESAFE A" actually could mean resistance to the Lactic acid. The possibility of the development of the resistance to Lactic acid was not evaluated due the fact that mentioned active substance is not included in in the work programme for the systematic examination of all existing active substances contained in biocidal products referred to in Regulation (EU) No 528/2012. The data on target organism's resistance had not been submitted by Applicant. However, Latvian CA revising the scientific literature (Theron MM., 2010) concludes that no clear scientific evidence exists that target organisms have developed resistance against the organics acid, such as Lactic acid.

#### 2.2.5.6 Known limitations

The limiting factors which may influence the efficacy testing procedure process have not been recorded in test reports. The efficacy studies of biocidal products within family "SALVESAFE A" had been performed in Laboratories which have a Good Laboratory Practice (GLP) statement in accordance with Standard procedure and conditions claimed in EN Standard Method ISO 17025:2005 and Laboratories which have the certificate according to ISO 17025:2005. Some efficacy studies were performed by SALVECO Microbiology Laboratory (Laboratory of Applicant). Based on congeniality of the outcomes of the studies, Latvian CA accepted the submitted test reports for consideration.

#### 2.2.5.7 Evaluation of the label claims

The biocidal product family "SALVESAFE A" is intended to be used in domestic, industrial and institutional area as:

- disinfectants for hands (SALVESAFE A28M, SALVESAFE A29M, SALVESAFE A33M, SALVESAFE A35M, SALVESAFE A36M and SALVESAFE A44M);
- disinfectants for all washable hard surfaces not intended for direct application to humans or animals and disinfectants for all washable hard surfaces in food and feed area (SALVESAFE A21M, SALVESAFE A23M, SALVESAFE A25M, SALVESAFE A28M, SALVESAFE A29M, SALVESAFE A30M, SALVESAFE A31M, SALVESAFE A32M and SALVESAFE A34M) and
- algaecide for outdoor hard surfaces such as roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses (SALVESAFE A27M).

The evaluation of efficacy demonstrates that the biocidal products within family "SALVESAFE A" meet agreed criteria for reduction of bacteria, yeast and virus (only *Influenza virus A/H1N1*) population in presence of organic soiling.

Therefore, biocidal product family "SALVESAFE A" is considered as disinfectants with proven efficacy against bacteria, yeast and against only *Influenza virus A/H1N1*. Latvian CA notes that biocidal product family "SALVESAFE A" does not meet the criteria on general virucidal claim.

The Latvian CA considers that the following label claims are supported:

- Product type 1 - disinfectants for hands – Biocidal efficacy at 20°C: bactericidal, yeasticidal and virucidal activity only against *Influenza virus A/H1N1* at the contact time 30 seconds.
- Product type 2 and 4 - disinfectants for all washable hard surfaces not intended for direct application to humans or animals and disinfectants for all washable hard surfaces in food and feed area – Biocidal efficacy at 20°C: bactericidal, yeasticidal and virucidal activity only against *Influenza virus A/H1N1* at the contact time 5 minutes.
- Product type 2 - algaecide for outdoor hard surfaces such as roofs, walls, concrete, stone, tiles, sport courts, playgrounds, greenhouses – Biocidal efficacy at 20°C: algaecide activity (48 h contact time).

## 2.2.6 Risk assessment for human health

### 2.2.6.1 Assessment of effects on Human Health

#### *Skin corrosion and irritation*

<b>Conclusion used in Risk Assessment – Skin corrosion and irritation</b>	
Value/conclusion	The biocidal product family "SALVESAFE A" does not have irritating/corrosive effects on the skin.
Justification for the value/conclusion	The corrosive/irritating effects to the skin of the biocidal product family "SALVESAFE A" have not been investigated experimentally. Based on the information on the hazards of the Lactic acid and co-formulants and their content in biocidal product family, the Latvian CA considers that the biocidal product family "SALVESAFE A" does not meet the criteria for classification for skin corrosivity and irritation.
Classification of the product according to CLP and DSD	Not relevant

#### *Eye irritation*

<b>Summary table of animal studies on serious eye damage and eye irritation</b>					
<b>Method, Guideline, GLP status, Reliability</b>	<b>Species, Strain, Sex, No/group</b>	<b>Test substance, Dose levels, Duration of exposure</b>	<b>Results</b>	<b>Remarks (e.g. major deviations)</b>	<b>Reference</b>
OECD guidelines 405 (GLP)	Confidential PAR	0.1mL of biocidal product Nettoyant Desinfectant with maximal content of each substance. Ocular examinations were performed 24, 48 and 72 hours	The test results included in Section 3.4. of Annex I	-	Confidential PAR

<b>Conclusion used in Risk Assessment – Eye irritation</b>	
Value/conclusion	The biocidal product family "SALVESAFE A" does not have irritating effects on the eye.
Justification for the value/conclusion	According to CLP regulation Annex I point 3.3.2.7 "Reversible effects on the eye (Category 2)", the substance shall be classified as Irrit. to eyes Cat. 2 if the substance produces at least in 2 of 3 tested animals the following effects: a) corneal opacity $\geq 1$ and/or b) iritis $\geq 1$ , and/or c) conjunctival redness $\geq 2$ and/or d) conjunctival oedema (chemosis) $\geq 2$ (calculated as the mean scores following grading at 24, 48 and 72 hours after installation of the test material, and which fully reverses within an observation period of 21 days). The test on Nettoyant Desinfectant (biocidal product with the maximal active substance and co-formulant's concentration) performed on 3 female albino New Zealand rabbits according to OECD guidelines 405 showed mean individual values 0-0,7 for corneal opacity, 0 for iritis,

	0,7-2,3 for conjunctival redness (only one animal showed conjunctival redness $\geq 2$ from 3 animals) and 0,3-1,3 for conjunctival oedema (chemosis). All effects were totally reversible within 21 days. Data represented in Section 3.3. of the confidential Annex I. No classification criteria are fulfilled, the biocidal product within family "SALVESAFE A" shall not be classified as eyes irritant.
Classification of the product according to CLP and DSD	Not relevant

### *Respiratory tract irritation*

<b>Conclusion used in the Risk Assessment – Respiratory tract irritation</b>	
Value/conclusion	The biocidal product family "SALVESAFE A" does not have irritating effects on respiratory tract.
Justification for the conclusion	The respiratory tract irritation effects of the biocidal products family "SALVESAFE A" have not been investigated experimentally. Based on the information on the hazards of the Lactic acid and co-formulants and their content in biocidal product family, the Latvian CA considers that the biocidal product family "SALVESAFE A" does not meet the criteria for classification for respiratory tract irritation.
Classification of the product according to CLP and DSD	Not relevant

### *Skin sensitization*

<b>Conclusion used in Risk Assessment – Skin sensitisation</b>	
Value/conclusion	The biocidal product family "SALVESAFE A" does not have sensitization effects on skin.
Justification for the value/conclusion	The potential effect on dermal sensitization of the biocidal product family "SALVESAFE A" has not been investigated experimentally. Taking into account the information on classification of the Lactic acid and co-formulants together with data on composition of formulation (Section 3.3 of Confidential Annex I), as well as Table 3.4.6 of Annex I of the CLP, Latvian CA considers that the biocidal product family "SALVESAFE A" does not meet the criteria for classification for sensitisation. The outcome of calculation method is mentioned in Section 2.1.2.5.
Classification of the product according to CLP and DSD	Not relevant



## Respiratory sensitization (ADS)

<b>Conclusion used in Risk Assessment – Respiratory sensitisation</b>	
Value/conclusion	The biocidal product family "SALVESAFE A" does not have respiratory sensitisation effects.
Justification for the value/conclusion	The respiratory sensitisation effects of the biocidal products family "SALVESAFE A" have not been investigated experimentally. Based on the information on the hazards of the Lactic acid and co-formulants and their content in biocidal product family, the Latvian CA considers that the biocidal product family "SALVESAFE A" does not meet the criteria for classification for respiratory sensitisation.
Classification of the product according to CLP and DSD	Not relevant

### Acute toxicity

Biocidal product family "SALVESAFE A" contains Lactic acid and no substance of concern. Latvian CA considers, that the biocidal product family "SALVESAFE A" does not meet the classification criteria for acute toxicity.

#### 2.2.6.2 Exposure assessment

The Applicant have not provided information regarding biocidal product family "SALVESAFE A" exposure on human health.

Taking into account the information on wide use of Lactic acid in food and cosmetic areas, no presence of substance of concerns, as well as, results on no classification of the biocidal product family "SALVESAFE A" and data requirements for Simplified procedure according to Regulation (EU) 528/2012, Latvian CA considers that detailed exposure assessment is not relevant.

Latvian CA accepts that the personal protective equipment are not required for the use of the biocidal product family "SALVESAFE A".

#### 2.2.6.3 Risk characterisation for human health

Taking into account the information on wide use of Lactic acid in food and cosmetic areas, no presence of substance of concerns, as well as, results on no classification of the biocidal product family "SALVESAFE A" and data requirements for Simplified procedure according to Regulation (EU) 528/2012, Latvian CA considers that detailed risk characterisation for human health is not relevant.

### 2.2.7 Risk assessment for the environment

#### 2.2.7.1 Effects assessment on the environment

Taking into account the information on wide use of Lactic acid in food and cosmetic areas, no presence of substance of concerns, as well as, results on no classification of the biocidal product family "SALVESAFE A" and data requirements for Simplified procedure according to Regulation (EU) 528/2012, Latvian CA considers that detailed assessment of effects on the environment is not relevant.

However, the Applicant had provided the study on aerobic biodegradability of the biocidal product with the maximal each co-formulant and Lactic acid concentration according OECD 301 B guideline (Salveco Biodegradability Analyses Report RPRI09YBA04) as additional supporting information. The results of the performed test show the 97% carbon dioxide generation during 28 days and 100% after 36 days. In accordance with point 4.1.2.9 of Annex I CLP the mixtures are considered rapidly degradable in the environment if carbon dioxide generation is 60% of theoretical maximum. Latvian CA accepts the outcome of the biodegradability study and considers that detailed exposure assessment is not required.

## **2.2.8 Measures to protect man, animals and the environment**

The biocidal product family "SALVESAFE A" is authorised under the specified use conditions which are summarized in Section 2.1.

For the protection of man, animals and the environment label must contain the following indications in addition to the elements already listed in Article 69 of Regulation (EU) 528/2012:

### **1. The instruction for use must contain the following indications on application:**

- 1.1. *Disinfectants for human hygiene (disinfectant for hands):* Wet hands and wrists with water. Place 3 mL of product in the hollow of the hand. Rub hands and wrists for at least 30 seconds. Rinse thoroughly with clean water. Apply once, repeat if renewed hand disinfection is needed.
- 1.2. *Disinfectants not intended for direct application to humans or animals (disinfectant for all washable hard surfaces):* Apply the product up to fully wet all the surface for 5 minutes. Rub or brush if necessary. Apply once and repeat the application if necessary.
- 1.3. *Algaecides not intended for direct application to humans or animals:* Use in the dry weather. Apply the product by wetting all surface. Allow the product functioning until complete drying. Do not rinse. Brush if necessary 2 days later to remove debris. Apply once and then monitor the situation regularly. Repeat the application if necessary.
- 1.4. *Food and feed area disinfectants (disinfectant for all washable hard surfaces):* Apply the product up to fully wetting all the surface for 5 minutes. Rub or brush if necessary. Rinse thoroughly with clean water. Apply once and repeat the application if necessary.

### **2. The label claim must contain the following indications:**

- 2.1. *Disinfectants for human hygiene (disinfectant for hands):* Biocidal efficacy at 20°C: bactericidal, yeasticidal and virucidal activity only against *Influenza virus A/H1N1* at the contact time 30 seconds";
- 2.2. *Disinfectants not intended for direct application to humans or animals (disinfectant for all washable hard surfaces):* Biocidal efficacy at 20°C: bactericidal, yeasticidal and virucidal activity only against *Influenza virus A/H1N1* at the contact time 5 minutes;

- 2.3. *Algaecides not intended for direct application to humans or animals:* Biocidal efficacy at 20°C: algaecide activity (48 h contact time);
- 2.4. *Food and feed area disinfectants (disinfectant for all washable hard surfaces):* Biocidal efficacy at 20°C: Biocidal efficacy at 20°C: bactericidal, yeasticidal and virucidal activity only against *Influenza virus A/H1N1* at the contact time 5 minutes.

**3. The label must contain the following precautionary information:**

Non-professional users:

- If medical advice is needed, have product container or label at hand;
- Keep out of reach of children.

Professional and industrial users:

- Safety data sheet is available on request.

**4. Additional information on first aid instruction:**

- If swallowed: Immediately call to a poison center or doctor/physician;
- In case of contact with eyes, remove contact lenses if present and rinse the eye slowly and gently with clean water.

**5. Waste management measures:**

- Dispose of contents/container according to national regulation.

**6. Storage conditions and stability:**

- Avoid cold, frost and heat
- The shelf life of the product is 24 months.

**7. Conditions for authorisation:**

- Summary: ready-to-use water based disinfectants in domestic, institutional and industrial area.
- Bactericidal and yeasticidal claim for PT2 and PT4 is relevant for biocidal products with Lactic acid concentration  $\geq 0.32\%$  w/w and  $\leq 1.76\%$  w/w.
- Bactericidal and yeasticidal claim for PT1 is relevant for biocidal products with Lactic acid concentration  $\geq 1.75\%$  w/w and  $\leq 1.76\%$  w/w.
- Efficacy against *Influenza virus A/H1N1* for biocidal products claimed for PT1 with Lactic acid concentration  $\geq 1.75\%$  w/w and  $\leq 1.76\%$  w/w.
- Efficacy against *Influenza virus A/H1N1* for biocidal products claimed for PT2 and PT4 with Lactic acid concentration  $\geq 0.42\%$  w/w and  $\leq 1.76\%$  w/w.
- Efficacy against algae for biocidal product with Lactic acid concentration  $\geq 1.69\%$  w/w and  $\leq 1.76\%$  w/w.

## **8. Requirements for further information:**

Latvian CA requests the Applicant to submit:

- Storage stability test – long term storage at ambient temperature. The final long term storage stability test report must be submitted until 1<sup>st</sup> of January 2018. However, the interim test reports for storage stability must be submitted after 12 and 18 month from the date of request accordingly.

CONFIDENTIAL

### **3 Annex I**

3.1. List of studies for the biocidal product family "SALVESAFE A"

3.2. List of References

CONFIDENTIAL

### 3.1. List of studies for the biocidal product family

Author(s)	Year	Title	Key study (Y/N)	Data Protection Claimed (Yes/No)	Owner
Confidential PAR	2012	Comparative assessment storage stability test for the biocidal product SALVESAFE A highest concentration before and after storage according to CIPAC MT 46.3.	N	Y	SALVECO
Confidential PAR	2013	Specific Dosage of Lactic acid by HPLC-UV in the sample Nettoyant Désinfectant Toutes Surfaces after storage according CIPAC MT 46.3.	Y	Y	SALVECO
Confidential PAR	2009	Evaluation of ultimate aerobic biodegradability in aqueous medium of reference sample "Disinfectant detergent for floors, surfaces and equipment" following the OECD 301 B guideline "Carbon Dioxide evolution test"	Y	Y	SALVECO
Confidential PAR	2014	Assessment of acute eye irritation Nettoyant Désinfectant	Y	Y	SALVECO
Confidential PAR	2014	EN 1276 (2010) Antiseptics and chemicals disinfectants – suspension quantitative test for assessment of antiseptics and chemicals disinfectants bactericidal activity used in agroalimentary sector, industry, household and community areas. "Potential active" substance.	Y	Y	SALVECO
Confidential PAR	2011	Algae and Moss Remover on-field activity test	Y	Y	SALVECO
Confidential PAR	2014	Algaecide effectiveness evaluation of reference product "Antimoss RTU"	Y	Y	SALVECO
Confidential PAR	2015	Efficacy of Salvesafe Soap X10 against Influenza virus A/H1N1 according to the EN 14476+A1 (2013) Standard	Y	Y	SALVECO
Confidential PAR	2015	Efficacy of Cleaner Disinfectant Spray against Influenza virus A/H1N1 according to the EN 14476+A1 (2013) Standard	Y	Y	SALVECO
Confidential PAR	2011	Fungicidal Activity of the B36 Product according to the EN 1650 Standard	Y	Y	SALVECO
Confidential PAR	2011	Fungicidal Activity of the ND TS 3% Product according to the EN 1275 Standard	N	Y	SALVECO
Confidential PAR	2011	Bactericidal Activity of the ND TS 3% Product according to the EN 1276 Standard	Y	Y	SALVECO
Confidential PAR	2011	Determination of Bactericidal Activity of the B36 Product according to the EN 1276 Standard	Y	Y	SALVECO
Confidential PAR	2013	Determination of Bactericidal and yeasticidal Activity of the ND TS Product according to the EN 13697 Standard	Y	Y	SALVECO
Confidential PAR	2015	Hygienic hadwash (EN 1499) SALVESAFE SOAP	Y	Y	SALVECO
Confidential PAR	2014	Bactericidal and yeasticidal efficacy (EN 13727 and EN 13624) SALVESAFE SOAP X10	Y	Y	SALVECO
Confidential PAR	2015	Yeasticidal efficacy (EN 1650) SALVESAFE SOAP	Y	Y	SALVECO
Confidential PAR	2015	Bactericidal efficacy (EN 1276) SALVESAFE SOAP	Y	Y	SALVECO

### 3.2. List of references

1. Regulation (EC) No 1333/2008 of the European Parliament and of the Council of 16 December 2008 on food additives
2. U.S. EPA April 25, 2008. USEPA Memorandum from Roger Gardner to A. Bryceland., entitled "Registration Review: Lactic Acid Preliminary Human Health Document".
3. Commission Regulation (EU) No 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No 1333/2008 of the European Parliament and of the Council
4. Simpson BK and *auth.*, 2012. Food biochemistry and food processing. John Wiley & Sons, Inc.
5. Dolci P and *auth.*, 2008. Microbial dynamics of Castelmagno PDO, a traditional Italian cheese, with a focus on lactic acid bacteria ecology. *International Journal of Food Microbiology*, 122, pp. 302-311.
6. Nassos PS and *auth.*, 1988. Lactic acid concentration as an indicator of acceptability in refrigerated or freeze-thawed ground beef. *Applied and Environmental Microbiology*, 54, pp. 822- 823.
7. European Parliament and Council Directive No 95/2/EC of 20 February 1995 on food additives other than colours and sweeteners
8. EMA, 2008. Status of MRL Procedures MRL assessments in the context of Council Regulation (EEC) No 2377/90  
[http://www.ema.europa.eu/docs/en\\_GB/document\\_library/Regulatory\\_and\\_procedural\\_guideline/2009/10/WC500004956.pdf](http://www.ema.europa.eu/docs/en_GB/document_library/Regulatory_and_procedural_guideline/2009/10/WC500004956.pdf)
9. EFSA, 2011. Scientific Opinion on the evaluation of the safety and efficacy of lactic acid for the removal of microbial surface contamination of beef carcasses, cuts and trimmings. 9(7), 2317 (35 pp)
10. Theron MM, J.F. Rykers Lues, 2010. Organics Acid and Food preservation, CRC Press.