Biocidal Products Committee (BPC)

Opinion on the application for approval of the active substance:

Salicylic acid

Product type: 3

ECHA/BPC/188/2018

6 March 2018

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Opinion of the Biocidal Products Committee

on the application for approval of the active substance salicylic acid for product type 3

In accordance with Article 89(1) of Regulation (EU) No 528/2012 of the European Parliament and of the Council 22 May 2012 concerning the making available on the market and use of biocidal products (BPR), the Biocidal Products Committee (BPC) has adopted this opinion on the approval in product type 3 of the following active substance:

Common name:	**Salicylic acid**
Chemical name:	**Salicylic acid**
EC No.:	**200-712-3**
CAS No.:	**69-72-7**

Existing active substance

This document presents the opinion adopted by the BPC, having regard to the conclusions of the evaluating Competent Authority. The assessment report, as a supporting document to the opinion, contains the detailed grounds for the opinion.

Process for the adoption of BPC opinions

Following the submission of an application by Salicylic Acid Consortium on 30 November 2009, the evaluating Competent Authority Netherlands submitted an assessment report and the conclusions of its evaluation to ECHA on 18 May 2017. In order to review the assessment report and the conclusions of the evaluating Competent Authority, the Agency organised consultations via BPC (BPC-24) and its Working Groups (WG V 2017). Revisions agreed upon were presented and the assessment report and the conclusions were amended accordingly.

Adoption of the BPC opinion

Rapporteur: Netherlands

The BPC opinion on the approval of the active substance salicylic acid in product type 3 was adopted on 6 March 2018.

The BPC opinion was adopted by consensus. The opinion is published on the ECHA webpage at: http://echa.europa.eu/regulations/biocidal-products-regulation/approval-of-active-substances/bpc-opinions-on-active-substance-approval.

Detailed BPC opinion and background

1. Overall conclusion

The overall conclusion of the BPC is that salicylic acid in product type 3 may be approved. The detailed grounds for the overall conclusion are described in the assessment report.

2. BPC Opinion

2.1. BPC Conclusions of the evaluation

a) Presentation of the active substance including the classification and labelling of the active substance

This evaluation covers the use of salicylic acid in product type 3. Specifications for the reference source are established. A study on the confirmation of the identity of impurities in technical salicylic acid is required, to be submitted 6 months prior to approval of the active substance.

The physico-chemical properties of the active substance and biocidal product have been evaluated and are deemed acceptable for the appropriate use, storage and transportation of the active substance and biocidal product.

Validated analytical methods are available for the active substance as manufactured and for the relevant and significant impurities. However, in the case that MRLs exist for salicylic acid, an analytical method for food/feed should be provided 6 months prior to the approval date.

A EU pharmacopoeia specification exists for salicylic acid, which was used to establish the upper limit for the relevant impurity phenol.

Salicylic acid has not yet a harmonised classification and labelling. The process is pending. The proposed Classification and Labelling according to Regulation (EC) No 1272/2008:

Classification according to the CLP Regulation	
Hazard Class and Category Codes	Repr.2 Acute Tox. 4 Eye Dam. 1
Labelling	
Pictogram codes	GHS08 GHS07 GHS05
Signal Word	Danger
Hazard Statement Codes	H361d Suspected of damaging the unborn child. H302 Harmful if swallowed. H318 Causes serious eye damage.
Specific Concentration limits, M-Factors	-
Justification for the proposal	
The classification is based on the RAC opinion of 10 March 2016.	

b) Intended use, target species and effectiveness

Use of the active substance

The active substance is used in PT3 as a ready-to-use product to disinfect teats of diary cows in a pre- and/or post-milking application as a dip or spray. The product is intended for agricultural usage by farmers.

Effectiveness of the active substance

The active substance is used as a veterinary hygiene product. The organisms to be controlled are bacteria, yeasts, fungi and viruses, while only efficacy on bacteria is demonstrated.

The disinfection working mechanism against bacteria and yeast is based on the diffusion of non-dissociated salicylic acid through the cell (plasma) membrane into the cytoplasm of the organism. Within the cytoplasm the non-dissociated salicylic acid will dissociate and the pH will strongly decrease. This strong decrease of the internal pH curbs the action of enzymes, stops the proton pump and destroys the cell function. Further growth inhibition can be caused by a multitude of mechanisms such as inhibition of glycolysis, inhibition of active chemical transport and hindering of signal transduction.

Since the mode of action is based on the non-dissociated form of salicylic acid, pH is an important parameter for efficacy. To ensure that salicylic acid is non-dissociated, the pH of the disinfectant should be lower than 3.

While specific mechanisms of adaptations to the effect of salicylic acid may be adopted by the organisms, the multi-target, multi-effect action mode of salicylic acid means that emergence of general bacterial resistance is unlikely to occur. Several years of practical experience with the substance has not revealed any resistance. Therefore, no prevention of the development of resistance is necessary.

c) Overall conclusion of the evaluation including need for risk management measures

Human health

The toxicological profile is based on data on salicylic acid and structurally closely related salicylates. This read-across is considered acceptable since the initial step in the metabolism of these salicylate compounds is hydrolysis to free salicylate. Salicylic acid is harmful via the oral route, but not acutely via the dermal route. Salicylic acid is used as a keratolytic agent, repeated topical application may cause mild transient irritation. Intoxications and even deaths in humans are described when salicylic acid was applied to a large body surface area.

Salicylic acid did not induced skin irritation while severe eye irritation has been observed, not recovering within 21 days of treatment and it is therefore classified as Eye Damage Category 1, H318 (causes serious eye damage). In subchronic and chronic oral studies with methyl salicylate in rats and dogs the most sensitive effect was reduced body weight gain and liver hypertrophy. Salicylic acid showed no genotoxic potential in in vitro and in vivo tests. No standard carcinogenicity study was available. However, other animal data and epidemiological studies in humans supports the view that the cancer risk is very low. Developmental toxicity was observed in studies in rat and monkeys, while the data from humans are considered inconclusive. Overall, the RAC considered classification of salicylic

acid as Repr. 2; H361d (Suspected of damaging the unborn child) to be justified. There is no clear evidence indicating that salicylic acid is hazardous for the fertility.

An assessment of endocrine disruptor activity as defined in Regulation (EU) No 2017/2100 has not been conducted.

The table below summarises the exposure scenarios assessed.

Summary table: human health scenarios			
Scenario	**Primary or secondary exposure and description of scenario**	**Exposed group**	**Conclusion**
Teat disinfection - spraying	Primary dermal and inhalation exposure using a trigger spray, including post-application using a wiping towel	Professional users	Acceptable without PPE
Teat disinfection - dipping	Primary dermal and inhalation exposure using dipping cups, including post-application using a wiping towel	Professional users	Acceptable without PPE

The risk assessment is performed the exposure for 2 milking sessions (pre- and post-milking). The risk of the combined exposure of primary exposure and post-application is considered to be acceptable without taking into account personal protective equipment (PPE). No other secondary exposure scenarios were identified.

Salicylic acid is classified for severe eye irritation (H318), however no local risk assessment has been conducted for the representative biocidal product, as it is not classified for local effects.

The biocidal product is used in veterinary settings. This preliminary risk assessment[1] is considered sufficient for the active substance approval process. No unacceptable risks are identified.

The worst case consumer exposure (WCCE) performed in this preliminary risk assessment, does not seem to indicate the need to set an MRL. In addition, the Committee for Medicinal Products for Veterinary Use (CVMP) already concluded that no MRL is needed for topical use in all food-producing species.

The consumer intakes and the MRLs need to be fully considered at the product authorisation stage and the approach taken in the CAR may not necessarily be appropriate at the product authorisation stage. MSs may require additional data and information to support authorisations.

Environment

Hydrolysis is not a relevant degradation pathway for salicylic acid. In aqueous environments, salicylic acid occurs as the salicylate anion (charge 1-) above pKa1 of 3.04, i.e. under environmentally relevant conditions. The molecule does not contain hydrolysable groups.

Photodegradation in water is not considered to be an important environmental fate process for salicylic acid.

[1] Estimated based on ARTFood Guidance on Estimating Livestock Exposure to Active Substances used in Biocidal Products and EMA Guideline on risk characterisation and assessment of maximum residue limits (MRL) for biocides.

The AOPWIN module from EPISuite (EPA, 2009) estimated a half-life of 1.23 d for photo-oxidation in air (reaction rate constant 13.0x10^{-12} cm^3 molecule^{-1} s^{-1}, OH radical concentration of 5×10^5 molecule cm^{-3} and a 24 h time span).

Salicylic acid is considered readily biodegradable which is supported by the results from studies on aerobic and anaerobic degradation during sewage treatment.

Adsorption of salicylate/salicylic acid in soils is pH dependent. The lowest Kd of 3.59 L/kg (at a soil pH of 7.5) was used in the exposure modelling to represent worst-case leaching potential to groundwater.

The table below summarises the exposure scenarios assessed.

Summary table: environment scenarios		
Scenario	**Description of scenario including environmental compartments**	**Conclusion**
Ready-to-use product for pre- and post milking disinfection of teats of dairy cows by dipping or spraying – used by professionals	Indirect releases occur via STP to the aquatic compartment (surface water and sediment) as well as due to sewage sludge or manure application on agricultural soil to the terrestrial compartment (soil and groundwater). Subsequently, the active substance may be transported to groundwater due to leaching from the top soil layer or enters the aquatic compartment due to runoff or the drainage system. Emission to the sewage treatment plant and subsequently to surface water is relevant for those farms connected to the municipal sewer or when waste water is collected and brought to the sewer. e.g. by tankers.'	Acceptable

As information regarding the annual amount of salicylic acid sold in Europe was submitted an exposure assessment based on both the expected use (consumption based approach) and on the actual tonnage could be performed. As the load to the Sewage Treatment Plant (STP) based on the expected use is worst-case and leads to acceptable risks, only the conclusions for this approach are presented below.

All risk quotients for the STP, aquatic and terrestrial compartments for PT 3 are < 1.
$PEC_{groundwater}$ values are below the 0.1 µg/L criterion for groundwater intended for the abstraction of drinking water.

The aggregated exposure assessment is applicable for the STP emission route for application in PT2, PT3 and PT4. The summed up PEC/PNEC for the STP, soil and groundwater compartments are well below 1 and thus acceptable. The risks for secondary poisoning were qualitatively assessed and found acceptable.

Overall conclusion

A safe use for human health and the environment is identified for disinfection of cow teats in a milking parlour by professional users.

2.2. Exclusion, substitution and POP criteria

2.2.1. Exclusion and substitution criteria

The table below summarises the relevant information with respect to the assessment of exclusion and substitution criteria:

<table>
<tr><th colspan="2">Property</th><th colspan="2">Conclusions</th></tr>
<tr><td rowspan="3">CMR properties</td><td>Carcinogenicity (C)</td><td>no classification required</td><td rowspan="3">Salicylic acid does not fulfil criterion (a), (b) and (c) of Article 5(1)]</td></tr>
<tr><td>Mutagenicity (M)</td><td>no classification required</td></tr>
<tr><td>Toxic for reproduction (R)</td><td>classified for toxic for reproduction, category 2</td></tr>
<tr><td rowspan="3">PBT and vPvB properties</td><td>Persistent (P) or very Persistent (vP)</td><td>not P or vP</td><td rowspan="3">Salicylic acid does not fulfil criterion (e) of Article 5(1) and does not fulfil criterion (d) of Article 10(1)]</td></tr>
<tr><td>Bioaccumulative (B) or very Bioaccumulative (vB)</td><td>not B or vB</td></tr>
<tr><td>Toxic (T)</td><td>T (Repr. Cat. 2)</td></tr>
<tr><td>Endocrine disrupting properties</td><td colspan="3">Salicylic acid is not considered to have endocrine disrupting properties.

An assessment according to the Regulation (EU) 2017/2100 has not been undertaken. A decision on whether or not salicylic acid fulfils criterion (d) of Article 5(1) cannot be made.</td></tr>
<tr><td>Respiratory sensitisation properties</td><td colspan="3">No classification required. Salicylic acid does not fulfil criterion (b) of Article 10(1).</td></tr>
<tr><td>Concerns linked to critical effects</td><td colspan="3">Salicylic acid does not fulfil criterion (e) of Article 10(1).</td></tr>
<tr><td>Proportion of non-active isomers or impurities</td><td colspan="3">Salicylic acid does not fulfil criterion (f) of Article 10(1).</td></tr>
</table>

Consequently, the following is concluded:

Salicylic acid does not meet the exclusion criteria laid down in Article 5 of Regulation (EU) No 528/2012. However, the endocrine disruptor properties have not been assessed as defined in Regulation (EU) No 2017/2100 and it is not possible to finally conclude on the exclusion criteria.

Salicylic acid does not meet the conditions laid down in Article 10 of Regulation (EU) No 528/2012, and therefore not considered as a candidate for substitution. The exclusion and substitution criteria were assessed in line with the "Note on the principles for taking decisions on the approval of active substances under the BPR"[2] and in line with "Further guidance on the application of the substitution criteria set out under article 10(1) of the BPR"[3] agreed at the 54th and 58th meeting respectively, of the representatives of Member States Competent Authorities for the implementation of Regulation 528/2012 concerning the making available on the market and use of biocidal products. This implies that the assessment of the exclusion criteria is based on Article 5(1) and the assessment of substitution criteria is based on Article 10(1)(a, b, d, e and f). However, the exclusion criteria were not assessed in line with the criteria laid down in the Annex of Regulation (EU) No 2017/2100 which apply as of 7 June 2018.

2.2.2. POP criteria

Salicylic acid does not fulfil the criterion for being a B substance. It is neither P nor does it show a potential for long-range transport. Hence, salicylic acid does not meet the criteria for being a persistent organic pollutant.

2.3. BPC opinion on the application for approval of the active substance salicylic acid in product type 3

In view of the conclusions of the evaluation, it is proposed that salicylic acid shall be approved and be included in the Union list of approved active substances, subject to the following specific conditions:

1. Specification: minimum purity of the active substance evaluated: 980 g/kg.

2. Technical salicylic acid shall not contain more than 0.2 g/kg of the relevant impurity phenol.

3. The authorisations of biocidal products are subject to the following condition(s):

    a. The product assessment shall pay particular attention to the exposures, the risks and the efficacy linked to any uses covered by an application for authorisation, but not addressed in the Union level risk assessment of the active substance.

[2] See document: Note on the principles for taking decisions on the approval of active substances under the BPR (available from https://circabc.europa.eu/d/a/workspace/SpacesStore/c41b4ad4-356c-4852-9512-62e72cc919df/CA-March14-Doc.4.1%20-%20Final%20-%20Principles%20for%20substance%20approval.doc)

[3] See document: Further guidance on the application of the substitution criteria set out under article 10(1) of the BPR (available from https://circabc.europa.eu/d/a/workspace/SpacesStore/dbac71e3-cd70-4ed7-bd40-fc1cb92cfe1c/CA-Nov14-Doc.4.4%20-%20Final%20-%20Further%20guidance%20on%20Art10(1).doc)

b. For products that may lead to residues in food or feed, the need to set new or to amend existing maximum residue levels (MRLs) in accordance with Regulation (EC) No 470/2009[4] or Regulation (EC) No 396/2005[5] shall be verified, and any appropriate risk mitigation measures shall be taken to ensure that the applicable MRLs are not exceeded.

The active substance does not fulfil the criteria according to Article 28(2)(a) to enable inclusion in Annex I of Regulation (EU) 528/2012. Salicylic acid is classified as suspected of damaging the unborn child (Repr. 2, H361d).

2.4. Elements to be taken into account when authorising products

The following recommendations and risk mitigation measures have been identified for the uses assessed. Authorities should consider these risk mitigation measures when authorising products, together with possible other risk mitigation measures, and decide whether these measures are applicable for the concerned product:

a. Efficacy: since the mode of action is based on the non-dissociated form of salicylic acid, pH is an important parameter for efficacy. To ensure that salicylic acid is non-dissociated, the pH of the disinfectant should be lower than 3. In general an acid will be added in the formulation of the product to ensure this pH. This acid, if there are no specific reasons to regard this as an active substance, can be seen as a pH regulator, not as an extra active substance when the pH is between 3 and 1. Below pH 1 it should be justified that this acid is not acting as an active substance in this formulation.

b. An assessment of the risk in food and feed areas may be required at product authorisation where use of the product may lead to contamination of food and feeding stuffs.

2.5. Requirement for further information

Sufficient data have been provided to verify the conclusions on the active substance, permitting the proposal for the approval of salicylic acid.

However, further data on the active substance are required and should be provided to the evaluating Competent Authority (NL) as soon as possible but no later than 6 months before the date of approval:

1. A study on the confirmation of the identity of impurities in technical salicylic acid is required.

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[4] Regulation (EC) No 470/2009 of the European Parliament and of the Council (OJ L 152, 16.6.2009, p. 11
[5] Regulation (EC) No 396/2005 of the European Parliament and of the Council (OJ L 70, 16.3.2005, p. 1