Preservatives & Cosmetic Micro Regulations in the EU

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Preservatives on the EU positive list

Cosmetic Preservatives are regulated in the current EU Directive by a Positive list (Annex VI).

- 58 preservatives listed

Presentation Outline

1. Preservatives on the EU positive list
   a. New preservatives
   b. Preservatives under review

2. The New European Cosmetic Regulation
   - Microbiological Quality
1.a. New Preservatives

1.b. Preservatives under review

Cetyl Pyridinium Chloride
Following a negative opinion from the SCCS in 2006, EU COM proposed to ban CPC.
Industry committed to submit a safety file in order to defend specific uses:
- 0.1% in ready-to-use mouthwashes
- 0.5% in all other oral hygiene products
- 0.2% in skin lotions & creams
- 2.0% in anti-perspirants, deodorants

It will not be listed as a preservative but in Annex III:
For purposes other than inhibiting the development of micro-organisms in the product. This purpose has to be apparent from the presentation of the product.

SCCS opinion awaited

Ethyl Lauroyl Arginate
57th Adaptation Cosmetic Directive (2010/3 February 2010) based on SCCS opinion (June 2011)
- Annex III = 0.8% soap, anti-dandruff shampoo, deodorant (non aerosol)
  For purposes other than inhibiting the development of micro-organisms in the product. This purpose has to be apparent from the presentation of the product.
- Annex VI = 0.4% except lips, oral hygiene and aerosols

Entry into force Sept. 2010 (products in the hands of the consumer: March 2011).
New SCCP mandate to evaluate the supplier data related to oral hygiene as ELA is approved as food additive: use in toothpastes and mouthwashes of concern
No regulatory change foreseen
1.b. Preservatives under review

**Citric acid (and) Silver Nitrate**
- Industry request: 0.2%
  - 1st SCCP opinion Jan. 2009: insufficient data.
  - 2nd SCCP opinion Oct. 2009: OK 0.2%, except oral hygiene and eye products but recommendation to evaluate the global exposure (argyriose).
- Discussed in meetings of the EU COM AHWP in 2010, with a proposal of regulation up to 0.0024% (expressed in silver).
- Since then, it was decided to perform a global exposure assessment. Still pending...

**Methylisothiazolinone / Methylchloroisothiazolinone**
- Industry request: 0.0015% in rinse-off products only.
- Draft Adaptation discussed at AHWP – Feb 2011: COM committed to writing to the SCCS to ask for clarification on:
  - sensitizing potential of the mixture
  - assessment of its effects on children
  - the stabilizing salts to be used in the mixture.
- Still no mandate ...

**Benzoisothiazolinone (BIT)**
- Industry request: 0.01% as a preservative, including oral care.
- SCCP opinion: positive but caution with sensitizing potential (to be reviewed at Sept. 2012 plenary meeting)

**Zinc pyrithione**
- Industry request: 2% anti-dandruff shampoo (extension from the currently 1% authorized in Annex III, specific purpose apparent from the presentation of the product)
- SCCS opinion pending (mandate April, 2009)

**Phenoxyethanol**
- Safety Assessment by the French "Commission de Cosmétologie" (03/2011) leads to the following conclusions:
  - Use prohibited in cosmetic products intended for the nappy area in children under 3 years
  - Restriction to 0.4% in all other product categories (instead of 1%)
- Request for evaluation at EU level (French and Industry safety files to be submitted to SCCS).
1. Preservatives under review

Parabens:
- Methyloxirane Ethylparaben: Authorization up to 0.2% (expressed as acid) for each of them & their salts.
- Propylparaben & Butylparaben: Reduction of the concentration to 0.15% (expressed as acid) for the sum of P & B & their salts.
- Ban in leave-on products dedicated to the nappy zone of children below 6 months (SCCS) (still under discussion as FR & DK asked ban for under 3 y).
- Warning labeling: family products = ????
- Mixing of esters & their salts should be limited to 0.8% (expressed as acid).
- Ban of Isopropyl & Isobutyl Parabens, Pentyloxirane, Phenylparaben, Benzylparaben.

Draft adaptation on ban of Isoparaben at the next AHWP (Nov. 2012).

Will be put under scrutiny regarding the timing for entry into application (2 years for the withdrawal from the market are foreseen).

1. Preservatives under review

Climbazole:
- Regulation as a preservative should be restricted to hair & face products up to 0.5%. Specific use at 2% as R.OFF anti-dandruff.
- COM should ask SCCS to review whether the use of climebazol in cosmetic products may increase the risk of cross-resistance to other azole antifungals (March 2012).

Triclosan:
- SCCS opinions 2009 & 2011: positive regarding some product categories, taking into account the antimicrobial resistance.
- Draft Adaptation currently under public consultation.
- Toothpastes / hand soaps / bath & shower products / deodorant / face powders & blashm concealers / nails products up to 0.3%.
- Mouthwashes up to 0.2%
- Ban in other products and in aerosols dispensers (sprays).
- To be voted next AHWP / Nov. 2012?

Cosmetic and Chemical Regulations

CMR Substances:
- 7th Amendment to the Cosmetic Directive (2003):
  - CMR substances are banned.
  - A substance classified as a CMR3 (DSD) may be used in cosmetics if the substance has been evaluated by the Scientific Committee and found acceptable for use in cosmetic products.

- Cosmetic Regulation (2009):
  - Idem as Dir 2001/15 but possibility to apply for an (exceptional) authorization of use of CMR 1a & 1b substances (ex-CMR 1 & 2 under DSD):
    - If they comply with the food safety requirements
    - If there are no suitable alternatives available
    - For a particular use with a known exposure
    - If they have received a favorable SCCS opinion
    - Re-evaluated every 5 years.
**Preservatives under review**

**Polyaminopropyl Biguanide - PHMB**
Proposal of CMR 2 (CLP) classification by France to ECHA.
- Supplier (Lonza) & Cosmetics Europe collaboration: try to avoid this classification and prepare a safety file for review by the SCCS.

**Chloracetamide**
CMR3 classification:
- March 2011 / SCCS opinion = not safe for use in cosmetic products
- November 2011 / EU COM: draft adaptation for a ban
- Still not voted!

**Quaternium-15**
CMR3 classification of the « cis » isomer:
- December 2011 / SCCP opinion = insufficient data
- Complementary data submitted by Industry / SCCS opinion awaited

**Formaldehyde & releasers**
Proposal of CMR 1a (CLP) classification by France to ECHA.
- Safety File with the aim to defend formaldehyde releasers
- Exemption criteria to be compiled

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**The New European Cosmetics Regulation**
(EC 1223/09)

**Timeline**
- NR Vote (24-Mar-09)
- Publication OJ of the EU (23-Dec-09)
- Notification (11-Jan-12)
- Entry into application (11-July-13)
- Notification (11-Jan-11)
- Nanomaterials notification (11-Jan-11)
- Entry into force (11-Jan-10)
- Notification (11-Jan-12)
- Entry into force (11-Jan-10)
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### Safety Assessment

#### Article 10:
- Product safety report updated for all cosmetic products on the market on 11 July 2013

#### Annex I:
- Content of the cosmetic product safety report

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#### Part A

<table>
<thead>
<tr>
<th>Safety information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative and quantitative composition</td>
</tr>
<tr>
<td>Physical/chemical characteristics and stability</td>
</tr>
<tr>
<td>Microbiological quality</td>
</tr>
<tr>
<td>Impurities, traces, information about the packaging material</td>
</tr>
<tr>
<td>Normal and reasonably foreseeable use</td>
</tr>
<tr>
<td>Exposure to the cosmetic product</td>
</tr>
<tr>
<td>Exposure to the substances</td>
</tr>
<tr>
<td>Toxicological profile of the substances</td>
</tr>
<tr>
<td>Undesirable effects and serious undesirable effects</td>
</tr>
<tr>
<td>Information on the cosmetic product</td>
</tr>
</tbody>
</table>

#### Part B

<table>
<thead>
<tr>
<th>Safety Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment conclusion</td>
</tr>
<tr>
<td>Labelled warnings and instructions of use</td>
</tr>
<tr>
<td>Reasoning</td>
</tr>
<tr>
<td>Assessor's credentials</td>
</tr>
</tbody>
</table>

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#### Annex I Cosmetic product safety report

The cosmetic product safety report shall, as a minimum, contain the following:

**PART A – Cosmetic product safety information**

3. **Microbiological quality**
   - The microbiological specifications of the substance or mixture and the cosmetic product. Particular attention shall be paid to cosmetics used around the eyes, on mucous membranes in general, on damaged skin, on children under three years of age, on elderly people and persons showing compromised immune responses.
   - Results of preservation challenge test.

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Annex I Cosmetic product safety report

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PART A – Cosmetic product safety information

3. Microbiological quality

- The microbiological specifications of the substance or mixture and the cosmetic product. Particular attention shall be paid to cosmetics used around the eyes, on mucous membranes in general, on damaged skin, on children under three years of age, on elderly people and persons showing compromised immune responses.

- Results of preservation challenge test.

European Commission Guidelines on Annex I

Final Draft August 2012

3. Microbiological quality

- The aim of this section is to determine the acceptable microbiological specifications of the raw materials (substances or mixtures) and finished product from a microbiological point of view. Particular attention shall be paid to the microbiological specifications of cosmetic products intended to be used on sensitive body parts and on specific populations.

- In addition, information regarding microbiological quality is essential in order to justify the effectiveness of the preservation system and justify the indicated minimum durability and period-after-opening (PAO) of the finished product in terms of safety.
3.3.1 Microbiological quality of substances and mixtures

The main parameters for microbiological quality are the original level of contamination and the possibility of microbial growth. Particular attention must be paid to the raw materials (substances and mixtures) most susceptible to microbial growth (e.g. water-based mixtures, protein-rich materials, plant or animal raw materials). On the other hand, there are raw materials which do not support microbial growth, e.g. organic solvents.

European Commission Guidelines on Annex I

3.3.2 Microbiological quality of the finished cosmetic product

Concerning microbiological susceptibility, there is a difference between three product categories:

1. Low microbiological risk products (e.g. products with an alcohol content >20 %, products based on organic solvents, high/low-pH products), for which neither a preservation challenge test nor microbiological quality tests on the finished product are necessary. A scientific justification should be provided, however.

2. Single-use products, and products which cannot be opened, for which only microbiological quality tests on the finished product are necessary.

3. All other products, for which both a preservation challenge test and microbiological quality tests on the finished product are necessary. Specific Guidelines on Microbiological Quality of the Finished Product are provided in the SCCS Notes of Guidance.

The SCCS's Notes of Guidance for the testing of cosmetic ingredients and their safety evaluation

7th revision (Déc. 2010)
The SCCS’s Notes of Guidance

4-4 GUIDELINES ON MICROBIOLOGICAL QUALITY OF THE FINISHED COSMETIC PRODUCT

Category 1: Products specifically intended for children under 3 years, to be used in the eye area and on mucous membranes.

*RECASS*: No mention made to "damaged skin", "elderly people" nor "persons showing compromised immune responses".

Category 2: Other products.

In order to ensure the quality of the product and the safety for the consumer, it is necessary to carry out routine microbiological analysis of each batch of the finished product coming on the market. The parameters examined, the criteria and methods used, and the results obtained per batch should be specified in properly filed reports and be taken up in the TIP.

*RECASS*: No mention made to "Low microbiological risk products".

4-4.2 Quantitative and qualitative limits

It is generally accepted that for cosmetics classified in Category 1, the total viable count for aerobic mesophilic microorganisms should not exceed $10^2$ cfu/g or $10^3$ cfu/ml when tested in 0.5 g or 0.5 ml of the product.

For cosmetics classified in Category 2, the total viable count for aerobic mesophilic microorganisms should not exceed $10^3$ cfu/g or $10^4$ cfu/ml when tested in 0.1 g or 0.1 ml of the product.
Pseudomonas aeruginosa, Staphylococcus aureus and Candida albicans are considered the main potential pathogens in cosmetic products. These specific potential pathogens must not be detectable in 0.5 g or ml of a cosmetic product of Category 1 and in 0.1 g or 0.1 ml of a cosmetic product of Category 2. It is important to note that the microbial limits mentioned above must be obtained after complete processing of 0.5 g (or 0.5 ml) and 0.1 g (or 0.1 ml) in the case of Category 1 and Category 2, respectively. This is done in order to ensure a statistically significant value of the microbial burden of a cosmetic in the case of positive results. However, smaller amounts of product may be processed in the routine quality control process if negative results are obtained.

4-4.3 Challenge testing
The efficacy of the preservation of a cosmetic product under development has to be assessed experimentally in order to ensure microbial stability and preservation during storage and use. This is done by challenge testing. The latter is mandatory for all cosmetic products that, under normal conditions of storage and use, may deteriorate or form a risk to infect the consumer.

The microorganisms used in the challenge test may be issued from official collection strains from any state in the EU to ensure reproducibility of the test and are: Pseudomonas aeruginosa, Staphylococcus aureus and Candida albicans.
4-4.3 Challenge testing

Microorganisms with the capability to contaminate specific cosmetics are the best candidates for use in a challenge test. Consequently, additional "in-house" bacteria and fungi may be used for additional specific purposes of challenge testing. The microcidal activity of preservatives or any other compound in the finished cosmetic must be ruled out in the challenge test by dilution, filtration, the addition of neutralisers or any other means.

The experimental performance of the microbial controls and the challenge tests must be carried out / supervised and validated by a microbiologist. As mentioned before, the manufacturer must guarantee the efficacy of the preservation of his products experimentally by challenge testing. However, as no legal nor universal challenge test method is available today, it is up to the manufacturer to decide on the details of the test to be used.

Reference method in the EU

According to the Internal Regulation of the CEN / CENELEC, the national standardisation bodies of the following countries are obliged to apply this European Standard:

- Germany, Austria, Belgium, Bulgaria, Cyprus, Croatia, Denmark, Spain, Estonia, Finland, France, Greece, Hungary, Ireland, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway,
- Netherlands, Poland, Portugal, Czech Republic, Romania, the United Kingdom, Slovakia, Slovenia, Sweden, Switzerland and Turkey.