The Consumer Voice in Europe

POTENTIAL HORMONE DISRUPTORS IN CONSUMERS' COSMETICS

BEUC comments to the European Commission's draft priority list

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BEUC comments to

European Commission preliminary priority list of potential endocrine disruptors in cosmetics

BEUC, The European Consumer Organisation welcomes the European Commission's **intention** to establish a priority list of potential endocrine disruptors used in cosmetic products. Scientists increasingly **link** endocrine-disrupting chemicals (EDCs) to a range of severe diseases and disorders, including infertility, obesity and cancer. Cosmetics ingredients with endocrine-disrupting (ED) properties represent a significant, potential source of cumulative consumer exposure to EDCs, including for vulnerable groups, such as pregnant and breast-feeding women, children and persons with compromised immune responses. As such, it is imperative that ingredients which may represent a risk to consumer health are systematically identified and their use in cosmetic products prohibited without delay.

Establish an EU review programme of cosmetics ingredients with ED properties

BEUC strongly supports the development of an EU priority list of potential endocrine disruptors used in cosmetics. However, this cannot be a 'closed' list. Rather, it is essential that a 'living' list of priority substances is established and updated in response to new evidence linking cosmetics ingredients to endocrine disruption.

The EU thus needs to establish a comprehensive review programme which will ensure that all cosmetics ingredients are eventually considered for evaluation by the Scientific Committee for Consumer Safety (SCCS) for their potential ED properties. This review programme should build on and integrate with similar EU chemical screening programmes, such as the REACH Community Rolling Action Plan (CoRAP) and the Biocidal Product work programme.

Inclusion of cosmetics ingredients in this review programme must be based on transparent criteria. This would allow scrutiny by the scientific community – and the public – of a decision to exclude a particular ingredient from further review. Where available data for an ingredient indicates potential endocrine disrupting properties, its use in cosmetics should be restricted – or prohibited altogether – unless safe use can be demonstrated beyond reasonable doubt.

The European Commission preliminary list of potential endocrine disruptors

Based on an initial **screening**, the Commission has established a 'preliminary indicative priority list of endocrine disruptors.' (see Annex I) BEUC firmly supports the inclusion of these six ingredients in a first priority list given the available evidence on their potential ED properties. We further recommend that *as a minimum* the additional 16 ingredients listed in Annex I are included in an initial priority list.

BEUC considers that further SCCS review of these ingredients is urgent to ensure their use in cosmetics do not present a risk for consumer health. Several of the ingredients listed in Annex I are thus currently undergoing review for their potential ED properties in the context of other EU regulatory frameworks, such as the REACH Regulation or the Biocidal Product Regulation. Regulatory action has in fact already been taken against some of these ingredients, such as triclosan, or is under consideration.

An SCCS review of these ingredients must consider the available evidence on their potential ED properties, as well as their potential to act in combination with other cosmetics ingredients. As correctly observed[1] by the Commission, there is "[…] increasing evidence showing that endocrine disruptors can work together to produce additive effects ("mixture effect", or "cocktail effect") so that exposure to a combination of endocrine disruptors may produce an adverse effect at concentrations at which individually no effect has been observed." The Commission therefore needs to mandate the SCCS to take such combination effects into account in its safety assessment. Subject to this assessment, the Commission must take the appropriate action to ban or restrict the use of these ingredients in cosmetics.

Given the scientific uncertainties around the question of whether safe thresholds[2] for endocrine disruptors can be determined at all, BEUC moreover insists that it is necessary to revisit the current safety evaluation of some ingredients already regulated under the Cosmetic Product Regulation, such as the parabens **restricted** in 2014.

A new regulatory approach to cosmetics ingredients with ED properties is urgent

The Commission has **announced** a reflection on whether legal changes to the Cosmetics Regulation with regard to endocrine disruptors is needed. BEUC welcomes this reflection on how consumers can be better protected against cosmetics ingredients with ED properties. We in particular insist that cosmetics ingredients with endocrine disrupting properties should be regulated consistent with substances of equivalent concern, such as those that cause cancer (*i.e.* CMRs). The Cosmetics Regulation prohibits use of known, presumed and suspected CMR substances, and a parallel approach is needed for substances with endocrine disrupting properties to achieve a high level of consumer protection. Equally, an explicitly mandate for addressing potential combination effects needs to be introduced in the Cosmetics Regulation.

Improve transparency for consumers on potential EDCs now

As an interim measure, we consider it essential that transparency on potential EDCs in cosmetics is improved. At present, there is a serious lack of information for consumers on which ingredients have been linked to endocrine disruption. As a result, it is almost impossible for consumers to avoid ingredients which may pose a risk to their health. Establishing a comprehensive priority list of potential endocrine disruptors would thus allow consumers to make informed choices on how to protect their health.

We nonetheless emphasise that improved transparency under no circumstance should shift responsibility to the consumer for avoiding exposure. Only a revised approach to cosmetics ingredients with ED properties as set out above is an acceptable solution to protect consumer health and safety.

[1] European Commission, **Towards a comprehensive European Union framework on endocrine disruptors**, COM(2018)734 final, November 2018.

[2] See *e.g.* Munn and Goumenou, **Thresholds for Endocrine Disrupters and Related Uncertainties**, *Report of the Endocrine Disrupters Expert Advisory Group* (ED EAG), 2013.

BEUC The European Consumer Organisation

Annex I – Initial priority list of potential endocrine disruptors in cosmetics

European Commission preliminary indicative priority list of potential endocrine disruptors

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Benzophenone-3 (BP-3)	131-57-7	**SCCP/1201/08**	Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012. Danish Centre on Endocrine Disruptors, ***Assessment of the endocrine disrupting potential of 23 UV-filters***, February 2013. Wang *et al.*, **Recent Advances on Endocrine Disrupting Effects of UV Filters**, International Journal of Environmental Research and Public Health 13(8), August 2016. Alamer and Darbre, **Effects of exposure to six chemical ultraviolet filters commonly used in personal care products on motility of MCF-7 and MDA-MB-231 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 38(8), August 2018. LaPlante *et al.*, **Oxybenzone Alters Mammary Gland Morphology in Mice Exposed During Pregnancy and Lactation**, *Journal of the Endocrine Society* 2(8), August 2018.	BP-3 has been associated with estrogenic, antiandrogen and thyroid activity, affecting several body functions including development and immune function (Source: Hass *et al*. 2012). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Evaluation ongoing. **Included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Benzophenone-3 (BP-3) (*Cont'd*)			Berger *et al.*, **Personal care product use as a predictor of urinary concentrations of certain phthalates, parabens, and phenols in the HERMOSA study**, *Journal of Exposure Science & Environmental Epidemiology* 29, January 2018. Berger *et al.*, **Associations of maternal exposure to triclosan, parabens, and other phenols with prenatal maternal and neonatal thyroid hormone levels**, *Environmental Research* 165. August 2018. Harley *et al.*, **Association of phthalates, parabens and phenols found in personal care products with pubertal timing in girls and boys**, *Human Reproduction* 34 (1), January 2019.	
Kojic acid (KA)	501-30-4	**SCCP/1182/08** **SCCS/1481/12**	Ota *et al.*, **A 55-week chronic toxicity study of dietary administered kojic acid (KA) in male F344 rats**, *Journal of Toxicological Sciences* 34(3), March 2009.	KA has been shown to interfere with either iodine organification or iodine uptake by the thyroid, resulting in altered thyroid functions (Source: Ota *et al*. 2009)
4-methylbenzylidene camphor (4-MBC)	36861-47-9 / 38102-62-4	**SCCP/1042/06** **SCCP/1184/08**	Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012.	4-MBC has been associated with estrogen, antiandrogen, thyroid and progesterone activity, affecting several body functions and target organs including development of reproductive organs and behaviour

INCI name	CAS No.	SCCS opinion	Selected References	Comments
4-methylbenzylidene camphor (4-MBC) (*Cont'd*)			Wang *et al.*, **Recent Advances on Endocrine Disrupting Effects of UV Filters**, International Journal of Environmental Research and Public Health 13(8), August 2016. Alamer and Darbre, **Effects of exposure to six chemical ultraviolet filters commonly used in personal care products on motility of MCF-7 and MDA-MB-231 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 38(8), August 2018. Quintaneiro *et al.*, **Toxicity effects of the organic UV-filter 4-Methylbenzylidene camphor in zebrafish embryos**, *Chemosphere* 218, March 2019.	(Source: Hass *et al*. 2012). **Included** on the SIN list as an endocrine disruptor.
Propylparaben	94-13-3	**SCCP/1017/06** **SCCS/1348/10** **SCCS/1514/13**	Darbre *et al*., **Parabens can enable hallmarks and characteristics of cancer in human breast epithelial cells: a review of the literature with reference to new exposure data and regulatory status**, *Journal of Applied Toxicology* 34(9), September 2014. Berger *et al.*, **Personal care product use as a predictor of urinary concentrations of certain phthalates, parabens, and phenols in the HERMOSA study**, *Journal of Exposure Science*	Propylparaben is associated with estrogenic and antiandrogen activity, affecting sperm function and prenatal development among others. The substance has been detected in biomonitoring studies and human urine and milk (Source: ChemSec, ***propylparaben***). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Information requested. **Included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Propylparaben (*Cont'd*)			*& Environmental Epidemiology* 29, January 2018. Berger *et al.*, **Associations of maternal exposure to triclosan, parabens, and other phenols with prenatal maternal and neonatal thyroid hormone levels**, *Environmental Research* 165. August 2018. Harley *et al.*, **Association of phthalates, parabens and phenols found in personal care products with pubertal timing in girls and boys**, *Human Reproduction* 34(1), January 2019.	
Triclosan	3380-34-5	**SCCP/1192/08** **SCCP/1251/09** **SCCS/1414/11**	Yoon *et al.*, **Triclosan Disrupts SKN-1/Nrf2-Mediated Oxidative Stress Response in C. elegans and Human Mesenchymal Stem Cells**, *Scientific Reports* 7, October 2017. Yang *et al.*, **A common antimicrobial additive increases colonic inflammation and colitis-associated colon tumorigenesis in mice**, *Science Translational Medicine* 10(443), May 2018. Ripamonti *et al.*, **Endocrine Disruption by Mixtures in Topical Consumer Products**, *cosmetics* 5(4), October 2018.	Triclosan has been associated with estrogenic and androgenic activity as well as impacts on thyroid function and thyroid homeostasis (Source: Ripamonti *et al.* 2018). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Information requested. **Included** on the SIN list; concern include endocrine disrupting effects. US FDA **banned** triclosan in consumer soaps in 2017.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Triclosan (*Cont'd*)			Berger *et al.*, **Associations of maternal exposure to triclosan, parabens, and other phenols with prenatal maternal and neonatal thyroid hormone levels**, *Environmental Research* 165. August 2018. Harley *et al.*, **Association of phthalates, parabens and phenols found in personal care products with pubertal timing in girls and boys**, *Human Reproduction* 34 (1), January 2019. Skarha *et al.*, **Cross-sectional associations between urinary triclosan and serum thyroid function biomarker concentrations in women**, *Environment International* 122, January 2019. Jackson-Browne *et al.*, **Early-life triclosan exposure and parent-reported behavior problems in 8-year-old children**, *Environment International*, February 2019.	
Resorcinol	108-46-3	**SCCS/1270/09**	Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012.	Resorcinol has been shown to affect thyroid function as well as estrogen and glucose metabolism (Source: ChemSec, ***resorcinol***). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Resorcinol (*Cont'd*)				**Status**: Concluded. Evaluation report **concluded** on the need for follow-up regulatory action at EU level based on concerns for thyroid disruption. The subsequent Risk Management Options Analysis (RMOA) **performed** by Finland concluded that harmonizing the classification for resorcinol is the most appropriate follow-up action. France has **proposed** to re-introduce resorcinol in CoRAP as a potential environmental endocrine disruptor. **Included** on the SIN list as an endocrine disruptor.

BEUC recommendations for priority ingredients to be included in the initial list of potential endocrine disrupters

INCI name	CAS No.	SCCS opinion	Selected References	Comments
tert.-Butylhydroxyanisole (BHA)	25013-16-5	N/A	Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012. Pop *et al.*, **Evaluation of the possible endocrine disruptive effect of butylated hydroxyanisole, butylated hydroxytoluene and propyl gallate in immature female rats**, Farmacia 61(1), February 2013.	BHA has been associated with reproductive dysfunction, increased cancer risk, including breast and prostate, and a range of other chronic or irreversible health problems, often from very low levels of exposure (Source: ChemSec, ***tert.-butylhydroxyanisole***). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Suspended.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
tert.-Butylhydroxyanisole (BHA) (*Cont'd*)				**Included** on the SIN list as an endocrine disruptor.
Butylated Hydroxytoluene (BHT)	128-37-0	N/A	Pop *et al.*, **Evaluation of the possible endocrine disruptive effect of butylated hydroxyanisole, butylated hydroxytoluene and propyl gallate in immature female rats**, Farmacia 61(1), February 2013.	BHT has been shown to disrupted thyroid gland function and morphology. Reduced fertility, altered growth and development, impaired learning and motor behaviours have also been observed *in vivo* (Source: ChemSec, ***butylated hydroxytoluene***). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Evaluation ongoing. **Included** on the SIN list as an endocrine disruptor.
Benzophenone-1 (BP-1)	131-56-6	N/A	Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012. Danish Environmental Protection Agency, **Survey and health assessment of UV filters**, *Survey of chemical substances in consumer products* No. 142, 2015. Wang *et al.*, **Recent Advances on Endocrine Disrupting Effects of UV Filters**, International Journal of Environmental Research and Public Health 13(8), August 2016.	BP-1 has been associated with antiandrogen and estrogenic activity, affecting reproductive organs (Source: ChemSec, ***2,4-dihydroxybenzophenon***). **Included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Benzophenone-1 (BP-1) (*Cont'd*)			Alamer and Darbre, **Effects of exposure to six chemical ultraviolet filters commonly used in personal care products on motility of MCF-7 and MDA-MB-231 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 38(8), August 2018.	
Benzophenone-2 (BP-2)	131-55-5	N/A	Rachon *et al.*, **In vitro effects of benzophenone-2 and octyl-methoxycinnamate on the production of interferon-gamma and interleukin-10 by murine splenocytes**, *Immunopharmacology and Immunotoxicology* 28(3), January 2006. Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012. Danish Environmental Protection Agency, **Survey and health assessment of UV filters**, *Survey of chemical substances in consumer products* No. 142, 2015. Wang *et al.*, **Recent Advances on Endocrine Disrupting Effects of UV Filters**, International Journal of Environmental Research and Public Health 13(8), August 2016.	BP-2 has been associated with estrogenic, thyroid and antiandrogen activity, affecting several body functions and target organs including development of reproductive organs (ChemSec, ***benzophenone-2***). **Included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Benzophenone-2 (BP-2) (*Cont'd*)			Alamer and Darbre, **Effects of exposure to six chemical ultraviolet filters commonly used in personal care products on motility of MCF-7 and MDA-MB-231 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 38(8), August 2018.	
Butylparaben	94-26-8	**SCCP/1017/06** **SCCS/1348/10** **SCCS/1514/13**	Darbre *et al.*, **Parabens can enable hallmarks and characteristics of cancer in human breast epithelial cells: a review of the literature with reference to new exposure data and regulatory status**, *Journal of Applied Toxicology* 34(9), September 2014. Pan *et al.*, **Parabens and Human Epidermal Growth Factor Receptor Ligand Cross-Talk in Breast Cancer Cells**, Environmental Health Perspectives 124(5), May 2016. Boberg *et al.*, **Multiple Endocrine Disrupting Effects in Rats Perinatally Exposed to Butylparaben**, Toxicological Sciences, 152(1), July 2016. Nowak *et al.*, **Parabens and their effects on the endocrine system**, *Molecular and Cellular Endocrinology* 474 (15), October 2018.	Butylparaben is associated with estrogenic and antiandrogen activity, affecting sperm function and prenatal development among others. The substance has been detected in biomonitoring studies and human urine and milk (Source: ChemSec, ***butylparaben***). **Included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Butylparaben (*Cont'd*)			Berger *et al.*, **Associations of maternal exposure to triclosan, parabens, and other phenols with prenatal maternal and neonatal thyroid hormone levels**, *Environmental Research* 165. August 2018. Harley *et al.*, **Association of phthalates, parabens and phenols found in personal care products with pubertal timing in girls and boys**, *Human Reproduction* 34 (1), January 2019.	
Methylparaben	99-76-3	**SCCP/1017/06** **SCCS/1348/10** **SCCS/1514/13**	Darbre *et al.*, **Parabens can enable hallmarks and characteristics of cancer in human breast epithelial cells: a review of the literature with reference to new exposure data and regulatory status**, *Journal of Applied Toxicology* 34(9), September 2014. Lillo *et al.*, **Methylparaben stimulates tumor initiating cells in ER+ breast cancer models**, *Journal of Applied Toxicology* 37(4), April 2017. Costa *et al.*, **Endocrine-disrupting effects of methylparaben on the adult gerbil prostate**, *Environmental Toxicology* 32(6), June 2017.	Methylparaben has been associated with estrogenic and antiandrogen effects in the prostate (Source: Costa *et al*. 2017) **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Information requested.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Methylparaben (*Cont'd*)			Berger *et al.*, **Associations of maternal exposure to triclosan, parabens, and other phenols with prenatal maternal and neonatal thyroid hormone levels**, *Environmental Research* 165, August 2018. Nowak *et al.*, **Parabens and their effects on the endocrine system**, *Molecular and Cellular Endocrinology* 474 (15), October 2018. Harley *et al.*, **Association of phthalates, parabens and phenols found in personal care products with pubertal timing in girls and boys**, *Human Reproduction* 34 (1), January 2019.	
Ethylhexyl Methoxycinnamate (OMC)	5466-77-3	N/A	Klammer *et al.*, **Multi-organic risk assessment of estrogenic properties of octyl-methoxycinnamate in vivo: A 5-day sub-acute pharmacodynamic study with ovariectomized rats**, *Toxicology* 215(1-2), November 2005. Rachon *et al.*, **In vitro effects of benzophenone-2 and octyl-methoxycinnamate on the production of interferon-gamma and interleukin-10 by murine splenocytes**, *Immunopharmacology and*	OMC has been associated with estrogenic and thyroid activity, affecting several body functions including development, brain and metabolism (Source: Hass *et al*. 2012) 2-Ethylhexyl trans-4-methoxycinnamate **included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. Previously registered as 2-ethylhexyl 4-methoxycinnamate, due to the indication of structural similarity of these substances, there may be a (potential) joined

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Ethylhexyl Methoxycinnamate (OMC) (*Cont'd*)			*Immunotoxicology* 28(3), January 2006. Seidlova-Wuttke *et al*., **Comparison of effects of estradiol (E2) with those of octylmethoxycinnamate (OMC) and 4-methylbenzylidene camphor (4MBC) — 2 filters of UV light – on several uterine, vaginal and bone parameters**, Toxicology and Applied Pharmacology 210(3), February 2006. Kunz and Fent, **Multiple hormonal activities of UV filters and comparison of in vivo and in vitro estrogenic activity of ethyl-4-aminobenzoate in fish**, *Aquatic Toxicology* 79(4), October 2006. Klammer *et al*., **Effects of a 5-day treatment with the UV-filter octyl-methoxycinnamate (OMC) on the function of the hypothalamo-pituitary–thyroid function in rats**, *Toxicology* 238(2-3), September 2007. Carbone *et al*., **In vitro effect of octyl - methoxycinnamate (OMC) on the release of Gn-RH and amino acid neurotransmitters by hypothalamus of adult rats**,	evaluation of these substances. **Status**: Information requested. **Included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Ethylhexyl Methoxycinnamate (OMC) (*Cont'd*)			*Experimental and Clinical Endocrinology & Diabetes* 118(5), May 2010. Axelstad *et al*., **Effects of pre-and postnatal exposure to the UV-filter Octyl Methoxycinnamate (OMC) on the reproductive, auditory and neurological development of rat offspring**, *Toxicology and applied pharmacology* 250(3), February 2011. Hass *et al.*, ***Evaluation of 22 SIN List 2.0 substances according to the Danish proposal on criteria for endocrine disrupters***, DTU Food, May 2012. Wang *et al.*, **Recent Advances on Endocrine Disrupting Effects of UV Filters**, International Journal of Environmental Research and Public Health 13(8), August 2016. Alamer and Darbre, **Effects of exposure to six chemical ultraviolet filters commonly used in personal care products on motility of MCF-7 and MDA-MB-231 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 38(8), August 2018.	

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Ethylhexyl Methoxycinnamate (OMC) (*Cont'd*)			Danish Environmental Protection Agency, **Survey and health assessment of UV filters**, *Survey of chemical substances in consumer products* No. 142, 2015.	
Cyclopentasiloxane (D5)	541-02-6	**SCCS/1241/10** **SCCS/1549/15**	Boberg, **Siloxan D5 og kriterier for hormonforstyrrende effect**, juli 2015. [Danish]	D5 has been associated with endocrine disrupting effects *in vivo*. In 2010, the SCCS **concluded** that the available data is insufficient to preclude a relevance for humans. Use of D5 in rinse-off cosmetics restricted under the REACH regulation (applies as of 31 January 2020); ECHA recently **proposed** a parallel restriction for use in leave on cosmetics. Given the concerns raised over the potential for endocrine disruption, combined with the timeframe for the proposed restriction on use in leave on cosmetics, the safety of D5 for consumer should be reconsidered
Cyclomethicone	69430-24-6 / 556-67-2 / 541-02-6 / 540-97-6	N/A		Cyclomethicone is a mixture of cyclic siloxanes; its principal components are in varying degrees octamethylcyclotetrasiloxane (D4), decamethylcyclopentasiloxane (D5) and dodecamethylcyclohexasiloxane (D6). Cf. above comments for D5; D4 is **included** on the SIN list as an endocrine disruptor.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Salicylic acid	69-72-7	SCCS/1601/18	Danish Centre on Endocrine Disruptors, ***List of Endocrine Disrupting Chemicals – final report*** and **annex**, September 2018.	Researchers from the Technical University of Denmark and the University of Southern Denmark conclude that there is solid scientific evidence that salicylic acid is an endocrine disruptor (Source: Danish Centre on Endocrine Disruptors 2018). Under the Biocidal Product Regulation, specific tests are currently ongoing to assess whether salicylic acid has endocrine-disrupting properties. Depending on the outcome of these tests, the SCCS **notes** that the potential endocrine disrupting properties of salicylic acid in cosmetic products may need to be considered.
Homosalate	118-56-9	SCCP/1086/07	Alamer and Darbre, **Effects of exposure to six chemical ultraviolet filters commonly used in personal care products on motility of MCF-7 and MDA-MB-231 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 38(8), August 2018. Yang *et al.*, **Homosalate aggravates the invasion of human trophoblast cells as well as regulates intracellular signaling pathways including PI3K/AKT and MAPK pathways**, *Environmental Pollution* 243, December 2018.	Homosalate has been associated with estrogenic and androgenic effects *in vitro* (Source: Danish Centre on Endocrine Disruptors February 2013). Regulatory Management Options Analysis (RMOA) under **development** by France; concerns include endocrine disruption.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Homosalate (*Cont'd*)			Danish Centre on Endocrine Disruptors, ***Assessment of the endocrine disrupting potential of 23 UV-filters***, February 2013.	
Benzyl salicylate	118-58-1	**SCCS/1459/11**	Charles and Dabre, **Oestrogenic activity of benzyl salicylate, benzyl benzoate and butylphenylmethylpropional (Lilial) in MCF7 human breast cancer cells in vitro**, *Journal of Applied Toxicology* 29(5), July 2009. Zhang *et al*., **The estrogenic potential of salicylate esters and their possible risks in foods and cosmetics**, *Toxicology Letters* 209(2), March 2012.	Benzyl salicylate has been associated with estrogenic activity, affecting the reproductive system (Source: Zhang *et al*. 2012). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Not started.
Butylphenyl methylpropianol (BMHCA)	80-54-6	**SCCS/1540/14** **SCCS/1591/17**	Danish Centre on Endocrine Disruptors, ***List of Endocrine Disrupting Chemicals – final report*** and **annex**, September 2018.	Researchers from the Technical University of Denmark and the University of Southern Denmark conclude that there is scientific evidence suggesting that BMHCA is a potential endocrine disruptor (Source: Danish Centre on Endocrine Disruptors 2018). **Included** in the Community Rolling Action Plan (CoRAP); concerns reproductive toxicity. **Status**: Ongoing.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Triphenyl phosphate	115-86-6	N/A	Green *et al.*, **Perinatal Triphenyl Phosphate Exposure Accelerates Type 2 Diabetes Onset and Increases Adipose Accumulation in UCD-Type 2 Diabetes Mellitus Rats**, *Reproductive Toxicology* 68, March 2017. Preston *et al.*, **Associations Between Urinary Diphenyl Phosphate and Thyroid Function**, *Environment International* 101, April 2017.	Triphenyl phosphate has been associated with decreased sperm concentrations. Studies in fish show altered levels of estradiol and testosterone, increased levels of vitellogenin and impaired reproduction (Source: ChemSec, ***triphenyl phosphate***). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Information requested. **Included** on the SIN list as an endocrine disruptor.
Triclocarban	101-20-2	**SCCP/0851/04**	Danish Centre on Endocrine Disruptors, ***List of Endocrine Disrupting Chemicals – final report*** and **annex**, September 2018.	Researchers from the Technical University of Denmark and the University of Southern Denmark conclude that there is solid scientific evidence that triclocarban is an endocrine disruptor (Source: Danish Centre on Endocrine Disruptors 2018). **Included** in the Community Rolling Action Plan (CoRAP) as a potential endocrine disruptor. **Status**: Not started. US FDA **banned** triclocarban in consumer soaps in 2017.

INCI name	CAS No.	SCCS opinion	Selected References	Comments
Deltamethrin	52918-63-5	N/A	Danish Centre on Endocrine Disruptors, ***List of Endocrine Disrupting Chemicals – final report*** and **annex**, September 2018.	Researchers from the Technical University of Denmark and the University of Southern Denmark conclude that there is scientific evidence suggesting that deltamethrin is a potential endocrine disruptor (Source: Danish Centre on Endocrine Disruptors 2018).

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