Delphic HSE Solutions Ltd

Cosmetic Product Safety Assessment

Report 17-11397 - RA74482

Vectair Bodywash & Shampoo 2in1

PRODUCT DETAILS

Type of Product: 2 in 1 Hair and Body Cleanser (Ficheux et | Rinse Off

Physical Form: Liquid

Client: Koninklijke Sanders bv
Industriepark Vliedberg 12
5251 RG Vlijmen,
Postbus 30
The Netherlands

Product Reference
D20118-1

CONCLUSIONS & RECOMMENDATIONS

Required Safety Labelling

If the product enters the eye, wash out thoroughly with plenty of clean water.

Overall Safety & Compliance

Under normal or reasonably foreseeable conditions of use, a product made to this formulation is unlikely to produce an abnormally high number of adverse reactions. Assuming the necessary warnings stated in the safety assessment are included on the product packaging it will give consumers the level of safety they can reasonably expect.

This product meets the requirements of the Australian Department of Health, Australian Industrial Chemicals Introduction Scheme (AICIS) and the Therapeutic Goods (Excluded Goods) Determination 2018.

This product complies with the requirements set out in the Hazardous Substances and New Organisms Act 1996: Cosmetic Products Group Standard 2006. To the best of our knowledge none of the ingredients included in this product are prohibited for use in Cosmetics within New Zealand. Any fragrances used within a Cosmetic Product intended for sale in NZ must comply with IFRA Guidelines.

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QUANTITATIVE & QUALITATIVE COMPOSITION

This formulation is an overview of the composition, listing only the chemical name and quantities added.
For full details on the ingredients, including INCI names for cosmetic products, please see Annex I - Raw Material Information.

The Assessment relates only to the formulation as described below. If this information is incorrect, please contact Delphic HSE with the correct information.

Ingredients	CAS Number	[Product]
Aqua	7732-18-5	85.37984
Sodium Laureth Sulfate	68585-34-2; 3088-31-1; 9004-82-4; 68891-38-3; 1335-72-4; 91648-56-5	8.35
Sodium Chloride	7647-14-5	2.0478
Cocamidopropyl Betaine	86438-79-1; 61789-40-0; 86243-76-7; 70851-07-9	1.552
Coco-Glucoside	58846-77-8; 110615-47-9; 68515-73-1; 141464-42-8; 54549-25-6	.558
Glyceryl Oleate	68424-61-3; 25496-72-4; 67701-32-0; 111-03-5	.558
PEG-3 Distearate	9005-08-7; 91031-45-7	.4
Perfume - CARING EFF308818 - European Flavours & Fragrances PLC	Mixture	.4
Citric Acid	77-92-9; 5949-29-1	.224
Sodium Benzoate	532-32-1	.19
Polyquaternium-7	108464-53-5; 26590-05-6	.18
Potassium Sorbate	590-00-1; 24634-61-5	.09
Sodium Lauroyl Glutamate	98984-78-2; 29923-31-7; 29923-34-0; 42926-22-7	.033
Benzoic Acid	65-85-0	.017
Propylene Glycol	57-55-6; 4254-14-2	.015
Sodium Glutamate	32221-81-1; 16177-21-2; 6106-04-3; 142-47-2	.0045
Tocopherol	1406-18-4; 10191-41-0; 1406-66-2; 2074-53-5; 59-02-9; 148-03-8; 119-13-1; 54-28-4	.00036
Sodium Hydroxide	1310-73-2	.00032
Hydrogenated Palm Glycerides Citrate	91744-68-2 ; 91052-16-3	.00018

Review of the Fragrance & Essential Oil components of this product indicate that the following allergens need to be declared on the product label:
Hexyl cinnamal. Limonene. Linalool.

PHYSICAL / CHEMICAL CHARACTERISTICS AND STABILITY OF THE COSMETIC PRODUCT

Appearance: Liquid
Odour: Characteristic - Perfumed
Melting Point: Not Provided
pH: 4,5 – 4,9
Specific Gravity: 1,017 - 1,047 g/mL (Density)
Viscosity: 3000 – 5500 cPs (Sp 3, 12 rpm)
Water Solubility: Not Provided
Log Kow: Not Provided
Particle Size: Not Provided

The physical-chemical data supplied for review suggests it would be unlikely to significantly contribute to the toxicological profile of the product under normal conditions of use.

Product Stability:

Non-EU

PHYSICAL / CHEMICAL CHARACTERISTICS OF THE SUBSTANCES OR MIXTURES

The physical-chemical characteristics of the substances and mixtures used within the formulation are continued in Annex I of this document. Such data provided are representative of publicly available data, and is provided for information purposes only.

MICROBIOLOGICAL QUALITY

TVC: ≤100 cfu/g (Under 3, Eye Area, Mucous Membrane)
≤1000 cfu/g (All other products)
Specific Pathogens: Absent in test sample
Yeasts & Moulds: ≤10 cfu/g

Non-EU

Non-EU

Microbiological specifications of the substances and mixtures used within the product have not been reviewed, and will be subject to grade variation dependent upon manufacturer and batch. The Organisation responsible for placing the product on the market must ensure that all raw materials used in production are of a suitable cosmetic grade and would not contribute a microbial risk to consumers.

IMPURITIES, TRACES, INFORMATION ABOUT THE PACKAGING MATERIAL

The below information is a list of impurities & trace materials declared by the manufacturer / responsible person as being present within the product.
If no materials are identified it is understood that no impurities or trace materials have been disclosed to Delphic HSE Solutions at the time of review.

Substances	CAS Number	[Product]

Packaging Material: Non-EU

Non-EU

Compatibility Testing Non-EU

Product Durability Non-EU

NORMAL & REASONABLY FORESEEABLE USE

Normal Use:

2 in 1 Hair and Body Cleanser (Ficheux et | Rinse Off

Manufacturers Instructions for Use:

Shower & Shampoo - Apply to Whole Body/Hair/Scalp

Reasonably Foreseeable Uses:

EXPOSURE TO THE COSMETIC PRODUCT

Intended Consumer:	Adult Males & Females (16+)
Single Exposure:	43.9 g | 2 x per Day
Retention Factor:	0.01

Exposure to Neat Product:

Body Site(s):	Hands
Surface Area:	779 cm^2
Exposure Level:	1.127 mg/cm^2
Exposure Time:	Washed off immediately

Minimum Expected Body Weight	60kg
Diluted in use:	Yes 1 in 200
Retained Exposure:	14.633 mg/kg/day

Exposure to Diluted Product:

Body Site(s):	Head; Whole Body
Surface Area:	16,620 cm2
Exposure Level:	0.053 mg/cm2
Exposure Time:	Washed off after 2 - 3 minute delay

EXPOSURE TO THE SUBSTANCES & TOXICOLOGICAL PROFILE OF THE SUBSTANCES

The toxicological data of the substances and mixtures used within the formulation are continued in Annex II of this document. Such data provided are representative of publicly available data, and is provided for information purposes only.

UNDESIRABLE EFFECTS AND SERIOUS UNDESIRABLE EFFECTS

This is a new product to market, no previous sales or complaints data is available for review. Manufacturer / responsible person must ensure that details of any concerns or complaints relating to consumer safety and adverse health effects are provided to Delphic HSE so that the safety assessment can be updated accordingly.

INFORMATION ON THE COSMETIC PRODUCT

Details of user trials/additional product safety testing have not been supplied for review, and this assessment is conducted on the basis that no such testing has been undertaken. Should this be inaccurate, or additional testing be conducted in the future, Delphic HSE should be notified of the details of such testing so this safety assessment can be updated accordingly.

ASSESSMENT CONCLUSION

Under normal or reasonably foreseeable conditions of use, a product made to this formulation is unlikely to produce an abnormally high number of adverse reactions. Assuming the necessary warnings stated in the safety assessment are included on the product packaging it will give consumers the level of safety they can reasonably expect.

This product meets the requirements of the Australian Department of Health, Australian Industrial Chemicals Introduction Scheme (AICIS) and the Therapeutic Goods (Excluded Goods) Determination 2018.

This product complies with the requirements set out in the Hazardous Substances and New Organisms Act 1996: Cosmetic Products Group Standard 2006. To the best of our knowledge none of the ingredients included in this product are prohibited for use in Cosmetics within New Zealand. Any fragrances used within a Cosmetic Product intended for sale in NZ must comply with IFRA Guidelines.

LABELLED WARNINGS & INSTRUCTIONS FOR USE

If the product enters the eye, wash out thoroughly with plenty of clean water.

REASONING

A fragranced body wash and shampoo 2 in 1 intended for use by adults and for distribution within Australia and New Zealand.

No Observed Adverse Effect Levels (NOAELs), or other suitable Points of Departure (PoD) were not available for review for some of the materials. For those materials where a Margin of Safety (MoS) was not derived this is due to either a history of safe use at similar levels in cosmetic products related to the product under review, lack of biological activity or for a reason explained in the individual ingredient toxicological summary in Annex II. For those substances where suitable PoDs were available, the resultant MoS are above the typical recommended values (see Preface to Annexes).

A number of materials have recommended safe levels in percentage terms, as established by bodies such as the Scientific Committee on Consumer Safety (SCCS) or Cosmetic Ingredients Review (CIR) expert panel, or legal limits that are described in percentage terms. All such materials are present at or below the recommended safe levels or legal maximums, as indicated by the relevant entries in Annex II.

The formulation contains Sodium Laureth Sulfate (8.35%), Cocamidopropyl Betaine (1.552%), Coco-Glucoside (0.558%) - which are classified as H318 or H319 - Causes serious damage or irritation to eyes and can irritate the skin if exposure is prolonged. As the product is expected to be used in diluted form and is a rinse off product, skin irritation is not expected be a concern, but this is applicable when product is applied in diluted form and rinsed well after use. However, as the neat product will result in serious irritation, users should be recommended to wash eyes thoroughly with plenty of clean water if contact occurs.

The ingredient, Sodium Laureth Sulfate, may contain Dioxane as impurity. According to SCCS opinion, 10ppm dioxane in final product is considered as acceptable. Manufacturer must make sure the product contains no such kind of this impurity or levels of this impurity is kept to acceptable level.

The ingredient, Cocamidopropyl Betaine, contains secondary amides and may contain secondary amine impurities which may serve as substrates for N-nitrosation. Manufacturer must make sure that there are no nitrosamines in the finished product and the product should be kept in nitrite free containers. In the CIR report it is also mentioned that the material has potential to cause skin sensitisation, most likely due to the presence of impurities amidoamine (AA) and 3,3-dimethylaminopropylamine (DMAPA). Manufacturer must make sure that there are no such kind of this impurities or levels of this impurities are kept to very low levels.

The fragrance, CARING EFF308818, supplied by European Flavours & Fragrances PLC, is stated to comply with the International Fragrance Association (IFRA) (49th amendment) when used in class 9 products including bath products such as this, at up to a maximum concentration of 3.25% in the final product. This fragrance is present at 0.4% in this product, which is far below this maximum level and is therefore considered acceptable for use.

The fragrance contains 4-Methylanisole (CAS No. 104-93-8) at <1% (<0.004% in final product), which is self-classified as H361 (Repr. 2) according to the manufacturer's SDS. The substance has a long-term systemic oral and dermal Derived No Effect Level (DNEL) of 0.17 mg/kg bw/day identified in the Substance Evaluation Conclusion Document as required by REACH Article 48 and Evaluation Report for 4-Methylanisole CAS No 104-93-8 (2015). The DNELs are derived based on a NOAEL of 100 mg/kg bw/day identified in an OECD TG 407 study (GLP conform, conducted in 1995), which is also protective against the oral developmental toxicity observed in an OECD TG 421 study (NOAEL = 100 mg/kg bw/day, GLP conform, conducted in 2010). Based on consumer exposure level, the Margin of Exposure (MoE) compared to the identified DNEL is > 1. Together with the fact that developmental effects were not observed following administration of the material via the dermal route, it is unlikely that the levels of 4-methylanisole in this product, for which ingestion is not considered to be a significant/likely route of exposure, would be of appreciable health concern to the majority of users.

It should be noted that the full composition of the fragrance has not been disclosed. The assessment and Fragrance information is therefore based solely on supplied information and the manufacturer must make sure there are no ingredients present that are prohibited for use.

The product contains Polyquaternium-7, which is a copolymer of acrylamide and diallyldimethylammonium chloride. The manufacturer must ensure that the residual acrylamide content is no more than 0.5 mg/kg in the product.

Overall, assuming suitable grades of material are used during manufacture and the product is labelled appropriately, this item can be considered safe for the intended use. It would not be expected to pose a significant risk of adverse effects in a majority of individuals and would be expected to provide consumers with the level of safety they might reasonably expect from a product of this nature.

Skin Toxicity - Neat Product

The product as supplied may cause some skin irritation if exposure is prolonged and/or repeated.
Exposure to this product is unlikely to result in photo-toxic effects.

There are low levels of substances present in this product which are known to cause an allergic reaction. The concentrations are sufficiently low not to present a risk of inducing allergy. However people already sensitised may show an adverse reaction when using this product. The identity of these ingredients will be shown on the label, enabling those potentially affected to avoid contact.

Unlikely to produce systemic toxicity following skin contact.

Skin Toxicity - Diluted Product

Contact with the dilute solution may cause slight skin irritation especially if contact is prolonged or repeated. However, if rinsed well from the skin, irritation is most unlikely.

Exposure to this product when diluted is unlikely to result in photo-toxic effects.

Exposure to the diluted product may elicit an allergic reaction in people already sensitized to one or more of the components of this formulation especially after prolonged or repeated skin exposure. However, under normal conditions of use, the likelihood of inducing allergy in previously healthy individuals is low.

When diluted in use, unlikely to cause systemic toxicity following skin contact.

Eye Toxicity - Neat Product

Contact with the eyes can cause severe irritation. If not washed out promptly, will injure the eye tissue and permanent damage may result.

Eye Toxicity - Diluted Product

When diluted in-use, the product may irritate the eye.

Oral Toxicity - Neat Product

All materials if swallowed in large amounts have the potential to cause injury. If incidentally swallowed in small amounts, may cause some irritation to the mouth and upper digestive tract.

Not expected to produce systemic toxicity following ingestion. All materials if swallowed in large amounts have the potential to cause injury.

Oral Toxicity - Diluted Product

If swallowed, the diluted product in-use may cause slight, transient irritation to the mouth and upper digestive tract.

Not expected to produce systemic toxicity following ingestion.

Inhalation Toxicity

It is unlikely that inhalation will be a route of exposure.

Toxicological & Regulatory Assessor

Dr V Poon, BSc, PhD 8 Dec 2020

This report consists of 6 pages plus a Regulatory, Ingredient Data, Allergens, Exposure & Specifications Annex.
It is only valid as the original, complete document.

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Preface to Annexes

Annex II - Ingredient Data

Physical/Chemical and Toxicological data presented within these reviews are representative of publicly available data and provided for informational purposes only. Sources of data are identified (typically in brackets) following each data point, and there may be multiple data points for any given toxicological endpoint.

Margins of Safety (MoS) are calculated where suitable data are available, and may related to mg/kg, µg/cm^2 or percentage-based indications of safety.

MoS based on systemic (mg/kg) effects are calculated as 'Point of Departure (PoD)' / 'Systemic Exposure Dose (SED)', where:

PoD = Data point considered to be indicative of a 'safe' level of exposure. This may be an animal-derived No Observed Adverse Effect Level (NOAEL) or a value indicated as being safe to humans. In the case of the latter this would typically be in the form of an ADI (Acceptable Daily Intake) or DNEL (Derived No Effect Level) established by a governmental or scientific committee / body.

SED = (Product Used (mg) x Retention Factor x Concentration of Material in Product x Dermal Absorption) / intended user body weight (kg)

In the absence of material specific data a dermal absorption of 100% is assumed.
Where an animal-derived NOAEL is used as the PoD an MoS greater than 100 is typically considered acceptable for indicating safety to consumers.
For PoD based on established safe levels in humans an MoS of greater than 1 is typically considered as acceptable for indicating safety to consumers.

MoS based on localised (µg/cm^2) effects are calculated as 'Point of Departure (PoD)' / 'Dermal Exposure', where:

PoD = Data point considered to be indicative of a 'safe' level of exposure. This would typically be a µg/cm^2 value identified from either a Local Lymph Node Assay (LLNA) or Human Repeat Insult Patch Test (HRIPT).

Dermal Exposure = (Product Used (µg) x Retention Factor x Concentration of Material in Product) / Surface Area of Application

MoS based on percentage data are calculated as 'Point of Departure PoD' / 'Ingredient Concentration in Product', where:

PoD = Data point considered to be indicative of a 'safe' level of exposure. Typically a percentage identified as safe for use within a leave-on consumer product, as established by legislation or by a governmental or scientific committee / body.

Ingredient Concentration in Product = Concentration of Material in Finished Product x Retention Factor
(As safe levels are typically identified for leave-on products the retention factor is included within the calculation to account for use in rinse-off products)
For PoD based on established safe levels in finished products an MoS of greater than 1 is typically considered as acceptable for indicating safety to consumers.

Retention Factor is an estimation of the amount of product in prolonged contact with the skin under normal conditions of use, and expressed as the decimal form of a percentage. A retention factor of 1 relates to 100% of the product staying in prolonged contact with the skin and is typically used for all leave-on products. All other products have retention factors as determined by typical conditions of use, and these are presented under 'Exposure Scenario'.

Annex III - Allergen Levels

This annex details the total levels of individuals allergens within the finished product, either from direct addition to the product or as part of fragrances and essential oils. Information is provided in both percentage and ug/cm^2 terms.

Indicative Toxicological Data is provided for each allergen where available and may include:

Research Institute for Fragrance Materials No Effect Level (RIFM NEL, indicated as a percentage)
Patch Test Concentration (percentage)
Buehler Test
Guinea Pig Maximisation Test
Human Repeat Insult Patch Test (HRIPT, in either percentage or ug/cm2)
Human Repeat Open Application Test (HROAT, in either percentage or ug/cm2)
Human Maximisation Test (HMT, in either percentage or ug/cm2)

Annex IV - Foreseeable Exposures

This annex details additional exposure scenarios identified during the safety assessment as being reasonably foreseeable under normal conditions of use.

For the purposes of the safety assessment all MoS are calculated based on the intended product use, and any comments or concerns relating particularly to additional exposure scenarios is detailed in the Reasoning or Toxicological & Regulatory Review portions the assessment.

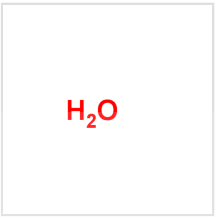
ANNEX I - REGULATORY CONTROLS

Substance: Aqua

CAS: 7732-18-5

Function: Solvent

Concentration in Product: 85.37984%



Regulatory Listings

Europe:

EINECS: 231-791-2

EU GHS Classification: Unclassified

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed
Inventory Obligations: Not Listed
SUSMP: Not Listed
Cosmetic Regulation: Not Controlled
TGA Controls: Controlled

New Zealand

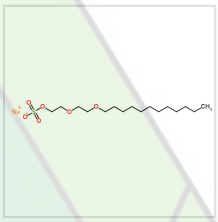
Cosmetic Regulation: Not Controlled

Substance: Sodium Laureth Sulfate

CAS: 68585-34-2; 3088-31-1; 9004-82-4; 68891-38-3; 1335-72-4; 91648-56-5

Function: Cleansing ; Emulsifying; Foaming; Surfactant

Concentration in Product: 8.35%



Regulatory Listings

Europe:

EINECS: 221-416-0; 500-234-8; 500-223-8; 293-918-8

EU GHS Classification: Self-classified under REACH as H302 (Harmful if swallowed), H315 (Causes skin irritation), H318 (Causes serious eye damage)*, H412 (Harmful to aquatic life with long-lasting effects).
* H319: 5% ≤ C < 10% (registration dossier under CAS 68891-38-3)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed
Inventory Obligations: No Regulatory obligations
Human health tier II assessment available.
SUSMP: Not Listed
Cosmetic Regulation: May contain Dioxane (Controlled by SUSMP (Schedule 6) with a limit of 100 ppm, above which the scheduling labelling requirements apply)
TGA Controls:

New Zealand

Cosmetic Regulation: Levels of impurities may be controlled

Substance: Sodium Chloride

CAS: 7647-14-5

Function: Bulking; Masking; Oral Care; Viscosity Controlling

Concentration in Product: 2.0478%

Regulatory Listings

Europe:

EINECS: 231-598-3

EU GHS Classification: Not Classified (1251 notifiers)
H319 (481 notifiers)
(self-classification)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Listed

Australia

AICIS Inventory: Listed as Sodium chloride (NaCl)

Inventory Obligations: Chemical of low concern to human health (IMAP - Tier I - Human Health Assessment)

SUSMP: Not Controlled

Cosmetic Regulation: Not Controlled

TGA Controls:

New Zealand

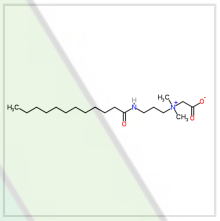
Cosmetic Regulation: Not Controlled

Substance: Cocamidopropyl Betaine

CAS: 86438-79-1; 61789-40-0; 86243-76-7; 70851-07-9

Function: Antistatic; Cleansing; Foam Boosting; Hair Conditioning; Surfactant; Viscosity Controlling

Concentration in Product: 1.552%



Regulatory Listings

Europe:

EINECS: 263-058-8; 274-923-4

EU GHS Classification: CAS No. 61789-40-0 - H315; H317(1); H319; H412 (self-classified, 6 notifiers with registration dossier *Experimental data suggests Cocamidopropyl Betaine itself Is not a skin sensitiser); H315; H319 (self-classified, 621 notifiers); H315; H319; H400 (self-classified, 473 notifiers)
CAS No. 70851-07-9 – H315; H318; H412 (self-classified, 32 notifiers)
CAS No. 86438-79-1 – H318 (self-classified, 3 notifiers)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: listed

Inventory Obligations: Not Listed

SUSMP: Listed, schedule 6, as Amidopropyl Betaine (exception)

Cosmetic Regulation: Controlled by SUSMP (schedule 6) except: a) in cosmetic wash-off preparations containing 30 per cent or less of amidopropyl betaines b) in cosmetic leave-on preparations containing 1.5 per cent or less of amidopropyl betaines; or c) in other preparations containing 30 per cent or less of amidopropyl betaines

TGA Controls: Controlled

New Zealand

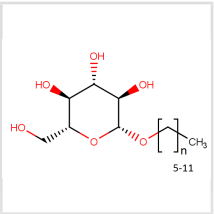
Cosmetic Regulation: Not Controlled

Substance: Coco-Glucoside

CAS: 58846-77-8; 110615-47-9; 68515-73-1; 141464-42-8; 54549-25-6

Function: Cleansing; Foaming; Surfactant

Concentration in Product: 0.558%



Regulatory Listings

Europe:

EINECS: 604-232-9

EU GHS Classification: Not officially classified
Notifications:
H315, H319 (104 from 161)
H315, H318 (56 from 161)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed
Inventory Obligations: Not Listed
SUSMP: Not Listed
Cosmetic Regulation: Not Controlled
TGA Controls:

New Zealand

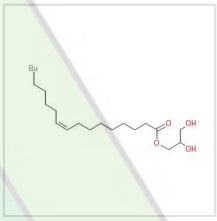
Cosmetic Regulation: Not Controlled

Substance: Glyceryl Oleate

CAS: 68424-61-3; 25496-72-4; 67701-32-0; 111-03-5

Function: Perfuming; Emollient; Emulsifying

Concentration in Product: 0.558%



Regulatory Listings

Europe:

EINECS: 247-038-6

EU GHS Classification: Unclassified

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed
Inventory Obligations: Not Listed
SUSMP: Not Listed
Cosmetic Regulation: Not Controlled
TGA Controls:

New Zealand

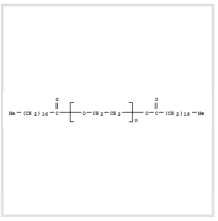
Cosmetic Regulation: Not Controlled

Substance: PEG-3 Distearate

CAS: 9005-08-7; 91031-45-7

Function: Emulsifying

Concentration in Product: 0.4%



Regulatory Listings

Europe:

EINECS: 618-408-8

EU GHS Classification: Unclassified

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed

Inventory Obligations: Not Listed

SUSMP: Not Listed

Cosmetic Regulation: Not Controlled

TGA Controls:

New Zealand

Cosmetic Regulation: Not Controlled

Substance: Perfume - CARING EFF308818 - European Flavours & Fragrances PLC

CAS: Mixture

Function: Perfuming

Concentration in Product: 0.4%

No Structure Available

Regulatory Listings

Europe:

EINECS: -

EU GHS Classification: H315, H317, H319, H411

REACh Annex XVII: Not controlled

REACh SVHC: Not controlled

Australia

AICIS Inventory: Propietary blends

Inventory Obligations: Propietary blends

SUSMP: Propietary blends

Cosmetic Regulation: not controlled

TGA Controls: Not Controlled

New Zealand

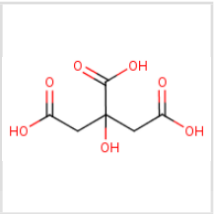
Cosmetic Regulation: Ingredient controlled

Substance: Citric Acid

CAS: 77-92-9; 5949-29-1

Function: Buffering; Chelating; Masking

Concentration in Product: 0.224%



Regulatory Listings

Europe:

EINECS: 201-069-1

EU GHS Classification: H319 (self-classification)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed

Inventory Obligations: Not Controlled. IMAP tier II assessment available.

SUSMP: Not Listed

Cosmetic Regulation: Not Controlled

TGA Controls: Controlled

New Zealand

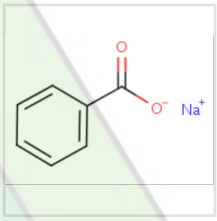
Cosmetic Regulation: Not Controlled

Substance: Sodium Benzoate

CAS: 532-32-1

Function: Anticorrosive; Masking; Preservative

Concentration in Product: 0.19%



Regulatory Listings

Europe:

EINECS: 208-534-8

EU GHS Classification: Self-classified under REACH as H319 (Causes serious eye irritation).

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed as Benzoic acid, sodium salt

Inventory Obligations: Listed

SUSMP: Not Controlled

Cosmetic Regulation: Not Controlled

TGA Controls: Controlled

New Zealand

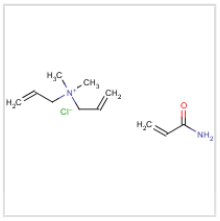
Cosmetic Regulation: Permitted Preservative - Rinse-off products, except oral care products: 2.5% (acid) ; Oral care products: 1.7% (acid) ; Leave-on products: 0.5% (acid). As sodium = 16% of the MW, the maximum % by weight of sodium benzoate is Rinse-off - 2.9%, Oral Care - 1.97% and leave-on - 0.59%.

Substance: Polyquaternium-7

CAS: 108464-53-5; 26590-05-6

Function: Film Forming; Antistatic

Concentration in Product: 0.18%



Regulatory Listings

Europe:

EINECS: -

EU GHS Classification: H412 (Self-classified)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed

Inventory Obligations: Not Listed

SUSMP: Not Listed

Cosmetic Regulation: Not controlled

TGA Controls:

New Zealand

Cosmetic Regulation: Controlled Schedule 5 Item 66. Body-care, Leave-on Products: Maximum residual acrylamide content 0.1 mg/kg; Other products Maximum residual acrylamide content 0.5 mg/kg

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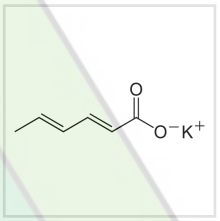
Substance: Potassium Sorbate

CAS: 590-00-1; 24634-61-5

Function: Preservative

Concentration in Product: 0.09%



Regulatory Listings

Europe:

EINECS: 246-376-1

EU GHS Classification: H319 (Harmonised classification)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed in AICS

Inventory Obligations: No regulatory controls/obligations.
NICNAS IMAP tier I assessment: Poses no unreasonable risk to human health

SUSMP: Not Listed

Cosmetic Regulation: Appendix B, Part 3 in SUSMP 15 - Appendix B: Substances considered not to require control by scheduling

TGA Controls:

New Zealand

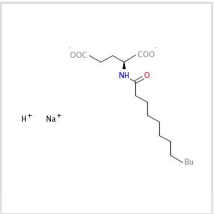
Cosmetic Regulation: Permitted Preservative - Max 0.6% (acid) All Products

Substance: Sodium Lauroyl Glutamate

CAS: 98984-78-2; 29923-31-7; 29923-34-0; 42926-22-7

Function: Antistatic; Hair Conditioning; Surfactant

Concentration in Product: 0.033%



Regulatory Listings

Europe:

EINECS: 249-958-3 / - / - / -

EU GHS Classification: H319, H315

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed

Inventory Obligations: Not Listed

SUSMP: Not Listed

Cosmetic Regulation: Not Controlled

TGA Controls:

New Zealand

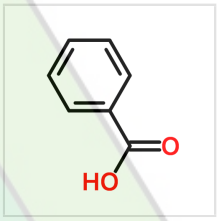
Cosmetic Regulation: Not Controlled

Substance: Benzoic Acid

CAS: 65-85-0

Function: Preservative; Masking; Bulking

Concentration in Product: 0.017%



Regulatory Listings

Europe:

EINECS: 200-618-2

EU GHS Classification: H318; H315; H372 (lungs) (inhalation) (Harmonised classification)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed

Inventory Obligations: No regulatory obligations.
NICNAS human health IMAP tier II assessment available.

SUSMP: Not Listed

Cosmetic Regulation: Not controlled

TGA Controls:

New Zealand

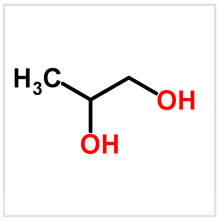
Cosmetic Regulation: Schedule 7 Permitted Preservative - Rinse-off products, except: Oral care products: 2.5% (acid); Oral care products: 1.7% (acid); Leave-on products: 0.5% (acid)

Substance: Propylene Glycol

CAS: 57-55-6; 4254-14-2

Function: Humectant; Skin Conditioning; Solvent; Viscosity Controlling

Concentration in Product: 0.015%



Regulatory Listings

Europe:

EINECS: 200-338-0; 610-038-5

EU GHS Classification: CAS No. 57-55-6:
Not Classified (self-classified, 6420 notifiers with joined entry); H410 (self-classified, 57 notifiers); H319 (self-classified, 40 notifiers); H302 (self-classified, 15 notifiers)
CAS No. 4254-14-2:
H319 (self-classified, 3 notifiers); Not Classified (self-classified, 2 notifiers)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed as 1,2-Propanediol (CAS No. 57-55-6)

Inventory Obligations: Not considered to pose an unreasonable risk to health based on Tier I IMAP assessment

SUSMP: Appendix B, Part 3 - Substances considered not to require control by scheduling (Reason: Low Toxicity)

Cosmetic Regulation: Not Controlled

TGA Controls:

New Zealand

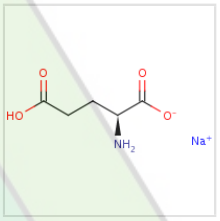
Cosmetic Regulation: Not Controlled

Substance: Sodium Glutamate

CAS: 32221-81-1; 16177-21-2; 6106-04-3; 142-47-2

Function: Fragrance; Hair Conditioning; Skin Conditioning

Concentration in Product: 0.0045%



Regulatory Listings

Europe:

EINECS: 205-538-1

EU GHS Classification: Not Classified

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed

Inventory Obligations: Not Controlled
Listed on NICNAS IMAP tier I assessment as Poses no unreasonable risk to human health

SUSMP: Not Listed

Cosmetic Regulation: Not Controlled

TGA Controls:

New Zealand

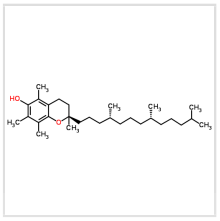
Cosmetic Regulation: Not Controlled

Substance: Tocopherol

CAS: 1406-18-4; 10191-41-0; 1406-66-2; 2074-53-5; 59-02-9; 148-03-8; 119-13-1; 54-28-4

Function: Skin Conditioning; Antioxidant; Masking

Concentration in Product: 0.00036%



Regulatory Listings

Europe:

EINECS: 200-201-5; 240-747-1; 233-466-0; 204-299-0; 215-798-8; -; 218-197-9; 200-412-2

EU GHS Classification: Self-classified by REACH registrants:
Not Classified (CAS No. 54-28-4; 59-02-9; 119-13-1; 1406-18-4; 1406-66-2)
H302 - Harmful if swallowed (CAS No. 148-03-8, 1 notifier)
H317 - May cause an allergic skin reaction Cat 1B (CAS No. 2074-53-5; 10191-41-0)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed
Inventory Obligations: Not Listed
SUSMP: Not listed
Cosmetic Regulation: Not Controlled
TGA Controls:

New Zealand

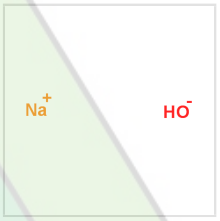
Cosmetic Regulation: Not Controlled

Substance: Sodium Hydroxide

CAS: 1310-73-2

Function: Buffering; Denaturant

Concentration in Product: 0.00032%



Regulatory Listings

Europe:

EINECS: 215-185-5

EU GHS Classification: Skin Corr 1A. H314 Causes severe skin burns and eye damage
Eye Irrit. 2; H319: 0,5 % ≤ C < 2 %
Skin Irrit. 2; H315: 0,5 % ≤ C < 2 %
Skin Corr. 1A; H314: C ≥ 5 %
Skin Corr. 1B; H314: 2 % ≤ C < 5 %
(*harmonised classification*)

REACh Annex XVII: Not Controlled

REACh SVHC: Not Controlled

Australia

AICIS Inventory: Listed
Inventory Obligations: Not Controlled. Human health tier II assessment available.
SUSMP: Listed: SODIUM HYDROXIDE (excluding its salts and derivatives) in preparations containing 5 per cent or less of sodium hydroxide being:(a) solid preparations, the pH of which in a 10 g/L aqueous solution is more than 11.5; or (b) liquid or semi-solid preparations, the pH of which is more than 11.5 except in food additive preparations for domestic use.
Cosmetic Regulation: listed in SUSMP as irritant/corrosive if pH is more than 11.5.
TGA Controls: Controlled

New Zealand

Cosmetic Regulation: Controlled - (a) Nail cuticle solvent (max 5% by weight) (b) Hair straightener 1. General use (2% by weight) 2. Professional use (4.5% by weight) (c) pH adjuster - depilatories (up to pH 12.7) (d) Other uses as pH adjuster (up to pH 11)

Substance: Hydrogenated Palm Glycerides Citrate

CAS: 91744-68-2 ; 91052-16-3

Function: Emollient; Skin conditioning

Concentration in Product: 0.00018%

No Structure Available

Regulatory Listings

Europe:

EINECS: 294-633-1

EU GHS Classification: Not classified

REACh Annex XVII: Not listed

REACh SVHC: Not classified

Australia

AICIS Inventory: Listed under CAS 91052-16-3

Inventory Obligations: No regulatory obligations.
NICNAS IMAP tier I assessment: Poses no unreasonable risk to human health.

SUSMP: Not listed

Cosmetic Regulation: Not controlled

TGA Controls:

New Zealand

Cosmetic Regulation: Not controlled

ANNEX II - INGREDIENT DATA

Substance: Aqua
CAS: 7732-18-5
Function: Solvent

Concentration in Product: 85.37984%
Dermal Exposure Level: 0.045104392 mg/cm^2
Daily Body Burden: 12.49391659mg/kg

Chemical Structure

H_2O

Physical/Chemical Characteristics

Boiling Point	100°C
Appearance	Clear colourless liquid
Flammability	Not flammable
Flash Point	not flammable
Molecular Mass	18
Melting Point	0°C
Odour	none
pH	7
Specific Gravity	1

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

A ubiquitous chemical substance that is the basis for all known forms of life. Use in consumer products is not expected to result in any Acute or Chronic Toxicity following typical exposures.

Margin(s) of Safety

ANNEX II - INGREDIENT DATA

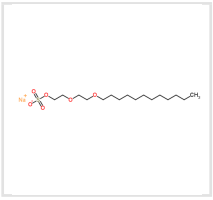
Aqua

Details on specific toxicological studies related to endpoints of concern are not available for Aqua, please see the previous page for a justification of safety based on history of use &/or weight of evidence.

ANNEX II - INGREDIENT DATA

Substance:	Sodium Laureth Sulfate	**Concentration in Product:**	8.35%	
CAS:	68585-34-2; 3088-31-1; 9004-82-4; 68891-38-3; 1335-72-4; 91648-56-5	**Dermal Exposure Level:**	0.004411131	mg/cm^2
Function:	Cleansing ; Emulsifying; Foaming; Surfactant	**Daily Body Burden:**	0.12218833mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	Colourless, Liquid	Molecular Mass	288.38
Boiling Point	103°C @ 920 hPa	Melting Point	<5 to 15C
Flammability	non flammable	Odour	odourless
Flash Point	104 °C @ 920 hPa	pH	6.47 (1%vol @ 26°C)
Log Kow	1.6		

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Sodium Laureth Sulfate is the sodium salt of sulfated ethoxylated lauryl alcohol, used as a surfactant in cosmetic products. It is used as shampoo, bath, and skin-cleansing ingredients, primarily because of its high degree of foaming and detergency and “softness” to the skin.

The oral LD50 was greater than 1.6 g/kg in rats and, barring the irritancy to the mucosa, it is not expected to produce significant adverse effects following ingestion.

Rats were used to study the skin penetration of Sodium Laureth Sulfate by treatment of radio labelled Sodium [1-14C] dodecyl triethoxy sulfate. The result suggested that the skin penetration was less than 1%. The penetration of Sodium Laureth Sulfate is believed to be low because the ingredient’s ethoxylation decreases its biological activity (CIR 1983). However, as a worst case scenario, a dermal absorption of 10% is assumed for margin of safety evaluation.

In animal studies, Sodium Laureth Sulfate produced no irritation or mild irritation to skin and eyes at low levels but was moderately to severely irritating to the skin and eyes at high concentrations.
In clinical studies, an 18% solution of the compound tested under occlusion produced a low level of irritation in 3 of 20 subjects. Another 18% solution brought about mild irritation in 11 out of 20 subjects. No primary irritation or sensitisation was produced by a 0.5% solution of the compound in formulation when it was tested on 196 volunteers in repeat insult patch test. A formulation containing 14.3% Sodium Laureth Sulfate caused no contact sensitisation.

For genotoxicity, the analogue Sodium Dodecyl Sulfate has been used as read across substance (sharing the same lauryl alcohol and sodium sulfate moieties which form the foundation of the read across approach). The only difference is Sodium Dodecyl Sulfate dose not have the polyethylene glycol (PEG) linkage moiety. However, PEG is a biologically inert chemical with a wide range of applications including bio-labelling tags and crosslinkers with no significant adverse effects related PEGs were reported (Harris et al 1997). CIR also reported that PEGs have low acute, short-term and chronic toxicity, not genotoxic or carcinogenic and concluded that these materials are safe for use in cosmetics (CIR 2010b). Moreover, there is 1-4 mol EO average ratio in Sodium Laureth Sulfate that won't significantly affect the whole molecule properties as compared to Sodium Dodecyl Sulfate. The read across genotoxicity studies show that the material is not genotoxic in both in vitro and in vivo tests.

A no-oberved-adverse-effect-level (NOAEL) of 1000 ppm in diet was identified from a 90-day repeat dose oral toxicity study in rats. This was based on increased kidney weight in males and increased heart, liver and kidney weight in females (relative organ weights were not significantly changed) at the next dose (5000 ppm). According to JECFA guideline, the NOAEL of 1000 ppm can be transferred into 50 mg/kg bw/day, which is selected as the point of departure (PoD) for safety assessment. Same oral NOAEL of 1000 ppm (50 mg/kg bw/day) was also found in another chronic oral toxicity study in rats conducted for 52 to 105-week.

A dermal NOAEL of 9% in solution was found in a 65-day repeat dose dermal toxicity study in rats.

Rats fed 0.1% of the compound in the diet showed no effects in the reproductive performances of the For FI, or F2 generation (NOAEL is also 1000 ppm - 50 mg/kg bw using JECFA guideline - in diet for reproductive toxicity). The dermal application of 5% Sodium Laureth Sulfate to mice twice a week for 105 weeks produced no skin tumours.

The Cosmetic Ingredient Review Expert Panel (CIR) repeated that the maximum use concentration of Sodium Laureth Sulfate in cosmetics products is 50%. The CIR expert panel has assessed the safety of Sodium Laureth Sulfate as used in cosmetics and considered it safe for use in cosmetics when formulated to be non-irritating (CIR 2010a).

A total surfactant load of around 20% within a finished product is considered not to pose an undue risk of skin irritation to the consumer when diluted for use. However, the dilute material is expected to produce some irritation of the eyes and mouth, which can be mitigated by rinsing the area with clean water. Typically this substance would be diluted during use and may react with other surfactant molecules to reduce the critical micellar concentration; leading to an overall reduction in irritancy. Supplied as either a 70% or 28% aqueous solution. May contain 1,4-dioxane as a contaminant of the manufacturing process (cyclic dimer combination or ethylene oxide) specification in cosmetics should demonstrate low levels.

Overall, based on the available toxicological data and the history of safety use in cosmetics, the use of this material at typical levels would not be expected to pose an undue risk to the majority of individuals under normal conditions of use.

References:
CIR (2010a). Final Report of the Amended Safety Assessment of Sodium Laureth Sulfate and Related Salts of Sulfated Ethoxylated Alcohols Cosmetic Ingredient Review (CIR). IJT 29 (Suppl. 3) :151-161.

CIR (1983). Final Report on the Safety Assessment of Sodium Laureth Sulfate and Ammonium Laureth Sulfate. Cosmetic Ingredient Review (CIR). JACT 2(5):1-34, 1983.

JECFA (2000). Guidelines for the preparation of toxicological working papers for the Joint FAO/WHO Expert Committee on Food Additives.

Harris, J. M. and Zalipsky, S. Eds (1997). Poly(ethylene glycol), Chemistry and Biological Applications, Safety of Poly(ethylene glycol) and Poly(ethylene glycol) Derivatives. ACS Symposium Series, 680.

CIR (2010b). Final Report of the Cosmetic Ingredient Review Expert Panel. Amended Safety Assessment of Triethylene Glycol and Polyethylene Glycols (PEGs)-4, -6, -7, -8, -9, -10, -12, -14, -16, -18, -20, -32, -33, -40, -45, -55, -60, -75, -80, -90, -100, -135, -150, -180, -200, -220, -240, -350, -400, -450, -500, -800, -2M, -5M, -7M, -9M, -14M, -20M, -23M, -25M, -45M, -65M, -90M, -115M, -160M and -180M and any PEGs ≥ 4 as used in Cosmetics (June 29, 2010).

Margin(s) of Safety

Point of Departure - Animal Study:	50.0000mg/kg	**Exposure from Product**	0.12218833mg/kg	**Margin of Safety**	409.20437

ANNEX II - INGREDIENT DATA

Sodium Laureth Sulfate

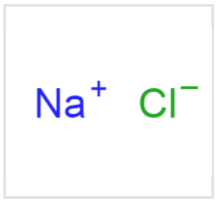
Acute Toxicity		LD50 = 1.6 g/kg bw
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Rat	Oral, NOS	
ADME		Rats were treated with radio labelled compound, Sodium [1-14C] dodecyl triethoxy sulfate in concentrations of 0.2% -2% (w/v), 37°C. Large amounts were rinsed off the skin (92.1±10.4%), the treated skin retained a low proportion of the sample (5.8±0.9%), and little adhered to the patch (1.2±0.2%). This evidence suggested that skin penetration was less than 1%.
In vivo absorption study [Other]		
Rat	Dermal	
Carcinogenicity		No skin tumors appeared. The tumorigenicity of sodium laureth sulfate was tested in groups of 30 female Swiss mice. Approximately 0.1 ml of a 5% aqueous solution was applied twice weekly to the skin of the interscapular area for 105 weeks.
Carcinogenicity studies [Other]		
Mouse	Dermal	
Eye Irritation		Severe eye irritation: 20 - 30 % Moderate eye irritation: 10 - 15 % Mild irritation: 5 % Mild and transient irritation: 1.3 %
Draize [Other]		
Rabbit	Instillation	
Genotoxicity		[Read-across from Sodium dodecyl sulfate] Not mutagenic at up to 5000 µg/plate on S. typhimurium TA 1535, TA 1537, TA 98 and TA 100 TA 1538 with and without S9 mix metabolic activator
Bacterial reverse mutation test (Ames) [OECD 471]		
Bacteria	In vitro exposure	
Genotoxicity		[Read-across from Sodium dodecyl sulfate] Not mutagenic at up to 100 µg/mL on mouse lymphoma cells with ands without metabolic activator S9
Mammalian cell gene mutation test [OECD 476]		
In-vitro culture	In vitro exposure	
Genotoxicity		[Read-across from Sodium dodecyl sulfate] Negative. No evidence of structural/numerical aberration. Doses: 0, 120, 380 or 1200 mg/kg bw
Genetic Toxicology: Rodent Dominant Lethal Test [OECD 478]		
Mouse	Oral, Gavage	
Repeated Dose		NOAEL = 1000 ppm (50 mg/kg bw/day); LOAEL = 5000 ppm (250 mg/kg bw/day) based on the increased kidney weight in males and increased heart, liver and kidney weight in females (relative organ weights were not significantly changed) 13-week feeding study, doses: 0, 40, 200, 1000, 5000 ppm (0,2,10,50,250 mg/kg bw/day) of Sodium Laureth Sulfate
Repeat Dose Oral Toxicity Study [Other]		
Rat	Oral, Feed	
Repeated Dose		NOAEL = 9% (solutions of 9% or less were applied for two months, no changes occurred in skin or in the hair cycle) Study on the effect of anion-active detergent Sodium Laureth Sulfate on the skin and the hair cycles of rats. Doses: 60%, 30%, 9%, 0.9%, 0% (control), applied to a 3 cm2 area on the depilated backs of the animals for 65 days.
Repeat Dose Dermal Toxicity Study [Other]		
Rat	Dermal	
Repeated Dose		NOAEL = 1000 ppm (50 mg/kg bw/day) In a chronic oral toxicity study in rats fed 1000 ppm and 5000 ppm Sodium Laureth Sulfate in the diet for 52 to 105 weeks, none of the animals showed gross or microscopic changes - CIR. ECHA: Scattered differences were found in organ:body weight ratios.
Repeat Dose Oral Toxicity Study [Other]		
Rat	Oral, Feed	
Reproductive Toxicity		NOAEL = 1000 ppm (0.1% in diet) Mated ten male and ten female rats after being fed 0.1%and 0% Sodium Laureth Sulfate for 14 weeks. F1 were maintained the same diets as their parents for about 100 days, F1 were bred and F2 were kept on same diet for 5 weeks after weaning. No effects in the reproductive performances of the For F1, or F2 generation.
In vivo reproductive toxicity study [Other]		
Rat	Oral, Feed	
Skin Irritation		No irritation at concentrations of 5%-5.6% Minimal irritation at 6%-10% Severe irritation at 25%.
In vivo skin irritation [Other]		
Rabbit	Dermal	
Skin Irritation		18 % solution of Sodium Laureth Sulfate induced low level of irritation in 3 out of 20 subjects In another test, the same solution induced mild irritation in 11 out of 20 subjects
Patch Test, 24hr [Other]		
Human	Dermal	
Skin Sensitisation		No instances of contact sensitisation upon exposure to a formulation containing 14.3 % Sodium Laureth Sulfate n=25
Maximisation Test [Other]		
Human	Dermal	
Skin Sensitisation		A repeat insult patch test of a dandruff shampoo containing Sodium Laureth Sulfate was tested on 196 subjects. This shampoo containing 0.5% Sodium Laureth Sulfate produced minimal primary irritation and no sensitization.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance: Sodium Chloride
CAS: 7647-14-5
Function: Bulking; Masking; Oral Care; Viscosity Controlling

Concentration in Product: 2.0478%
Dermal Exposure Level: 0.001081810 mg/cm^2
Daily Body Burden: 0.29966140mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	White crystalline solid
Boiling Point	1413°C
Molecular Mass	58.44
Melting Point	801°C
Odour	slight
pH	(1% soln/water): 7
Specific Gravity	2.165
Vapour Pressure	Not applicable
Water Solubility	Soluble

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Salt, commonly used as a viscosity controller or bulking agent. Saline solutions also find widespread medicinal usage. Categorised under GRAS (Generally Recognised as Safe) by the FDA (U.S. Food and Drug Administration) 21 CFR. §182.70 (2018).

The material is non-irritating to skin and eyes at up to a 20% solution, however above 20% the material is irritating to eyes and abraded skin. Details of specific sensitisation testing were not available for review, however saline solution is widely used for skin and wound cleaning without undue reports of allergenic activity.

Sodium Chloride has low acute oral toxicity, and a 2-year study in rats identified a Lowest Observed Effect Level (LOEL) of 2533 mg/kg/day related to chronic gastritis and high blood pressure.

There was no evidence of mutagenicity in the Ames test, however an in vivo Chromosomal Aberration Assay was positive at 2338 mg/kg. A 2-year combined carcinogenicity/repeat-dose toxicity study found no evidence of carcinogenic potential at doses up to 2533 mg/kg/day.

Derived no effect level (DNEL) of 126.65 mg/kg bw for the general population via both oral and dermal routes of exposure was set in European Chemical Agency (ECHA. 2019) registration dossier. As a food additive, Joint FAO/WHO Expert Committee on Food Additives (JECFA) stated the acceptable daily intake (ADI) of Sodium Chloride is 'not specified' (JECFA, 1986).

A technical report by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) recommended the consumption of less than 5 grams sodium chloride (or 2 grams sodium) per day as a population nutrient intake goal, while ensuring that the salt is iodized (WHO, 2012). Based on the average adult body weight of 60 kg, this recommended sodium chloride consumption equals to 83.3 mg/kg bw/day, which is selected as a conservative point of departure.

As dermal absorption is dependent on the molecular properties, concentration, exposure time and vehicle simultaneously, in the absence of relevant experimental data it is difficult to assess an exact value. If not stated otherwise within the risk assessment, we assume 100% dermal absorption, however it must be noted that for the majority of compounds, even low molecular weight, lipophilic compounds, dermal absorption is expected to be significantly lower than 100%. As an inorganic ionic substance, dermal absorption and resultant systemic availability are expected to be limited.

On the basis of the available information, use of Sodium Chloride at typical levels within a consumer product would be considered most unlikely to pose a risk of significant localised or systemic toxicity.

References

ECHA registration dossier for Sodium Chloride. https://echa.europa.eu/registration-dossier/-/registered-dossier/15467/7/1 (Last accessed: 25/03/2019)

GRAS listing, Sodium Chloride]. FDA, 21 CFR. §182.70 (2018) (Last accessed 21/05/2019).

JECFA, 1986. Evaluation of certain food additives and contaminants. Twenty-ninth reports of the Joint FAO/WHO Expert Committee on Food Additives. TRS 733-JECFA 29/13.

WHO (2012). Guideline: Sodium intake for adults and children.
https://apps.who.int/iris/bitstream/handle/10665/77985/9789241504836_eng.pdf?sequence=1

Margin(s) of Safety

Point of Departure - Human Data: 83.3000mg/kg **Exposure from Product** 0.29966140mg/kg **Margin of Safety** 277.980414

ANNEX II - INGREDIENT DATA

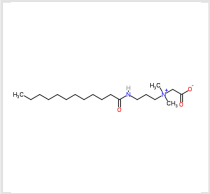
Sodium Chloride

Acute Toxicity		LD50 = 3000mg/kg
Acute Toxicity, Lethality [Other]		
Rat	Oral, Gavage	
Carcinogenicity		Non-carcinogenic (4% NaCl in the diet for 2 years) [LOEL of 2533 mg/kg/day related to chronic gastritis and high blood pressure.]
Combined chronic toxicity/carcinogenicity studies [OECD 453]		
Rat	Oral, Feed	
Eye Irritation		Moderately Irritating. [20% aqueous solution was non-irritating. Granular Sodium Chloride was moderately irritating, effects reversible in 7 days. One animal per dose.]
In vivo Eye Irritation [Other]		
Rabbit	Instillation	
Genotoxicity		Non-mutagenic (with and without metabolic activation) [S. typhimurium TA1535, TA1537, TA1538, TA98, TA100 and E. coli WP2 WP67 and CM871.]
Bacterial reverse mutation test (Ames) [OECD 471]		
Bacteria	In vitro exposure	
Genotoxicity		Positive (2338 mg/kg)
Mammalian bone marrow chromosome aberration test [OECD 475]		
Rat	Intraperitoneal	
Skin Irritation		Non-irritating to intact skin at up to 50% Significant irritant on abraded skin at greater than 20%
In vivo skin irritation [Other]		
Rabbit	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Cocamidopropyl Betaine	**Concentration in Product:**	1.552%	
CAS:	86438-79-1; 61789-40-0; 86243-76-7; 70851-07-9	**Dermal Exposure Level:**	0.000819889	mg/cm^2
Function:	Antistatic; Cleansing; Foam Boosting; Hair Conditioning; Surfactant; Viscosity Controlling	**Daily Body Burden:**	0.22710933mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	Yellow Powder / Liquid	Melting Point	- 6 C
Odour	Characteristic	Boiling Point	100 °C at 1 hPa
Molecular Mass	342.52	Viscosity	approx. 90 mPa.s at 25 °C (38% solution)
Specific Gravity	1,07 g/cm3 at 20 °C	Water Solubility	Miscible
pH	5 - 7		

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

A surfactant material, derived from coconut oil and dimethylaminopropylamine, that finds widespread use in consumer products. Typically diluted during use, and may react with other surfactant molecules to reduce the critical micellar concentration; leading to an overall reduction in irritancy.

Available data indicates that dilute solutions of cocamidopropyl betaine (less than 30% active) are mild to moderate irritants in respect of dermal and ocular tissue. Typically, up to 10% active solutions caused no or mild reversible skin irritation and mild to moderate reversible eye irritation in vivo, and up to 3% active solutions caused weak skin irritation in humans (HERA, 2005). Neat substance is generally regarded as irritant, and suppliers typically self-classify the material as a Category 2 Skin/Eye Irritant in accordance with UN GHS Criteria. No evidence of allergenic activity has been identified in animal or human studies, although a small number of case reports exist where individuals are identified as potentially being allergenic to this material, or the impurities (Mowad 2001). The incidence of allergy is considered very low, and whether the causative agent is an ingredient itself, or the substances used in the synthesis that are known potential impurities in the final product is debated (Fowler et al 1997; deGroot et al 1995).

Cocamidopropyl betaine displays low toxicity by the oral route in rodents. No evidence of genotoxic activity in a range of in-vitro assays, and animal studies demonstrated no carcinogenic potential.

Subacute (28-day) and subchronic (90-day) oral toxicity studies identified a NOAEL of 500 mg CAPB of unspecified concentration/kg bw/day based on occurrence of oedema of the mucosal lining of the non-glanduar stomach, and a NOAEL of 250 mg 30% active CAPB/kg bw/day based on forestomach gastritis, respectively. Such effects are typical following oral administration of irritants, and are the result of localised irritation. Resultantly they are not relevant for the safety assessment of dermally applied consumer products. As no other adverse effects were identified in these studies, the highest dose (1000 mg/kg/day, equivalent to 300 mg active CAPB/kg/day) from the 90-day study is considered as a conservative Point of Departure (PoD) for safety assessment, which is also chosen as the PoD in the HERA risk assessment (2005).

The substance is not considered a reproductive toxicant. It caused no adverse effects on fertility in the subchronic study. In an OECD 414 study, it showed no teratogenic potential even at maternal-toxic doses. Embryotoxicity was noted at the highest maternal-toxic dose (3,300 mg/kg/day, equivalent to 950 mg active CAPB/kg/day) in which the maternal toxicities shown (reduced body weights and stomach ulcers) were seemingly results of its irritating potential.

The Cosmetics Ingredient Review (CIR) Expert Panel indicates that Cocamidopropyl betaine contains secondary amides and may contain secondary amine impurities which may serve as substrates for N-nitrosation and should not be included in the formulation with Nitrosating agents (CIR, 2012). The CIR report also notes that the material has potential to cause skin sensitisation, most likely due to the presence of impurities amidoamine (AA) and 3,3-dimethylaminopropylamine (DMAPA). The manufacturer must make sure that there are no such impurities or levels of this impurities are kept to very low levels.

The CIR Panel concluded that because these ingredients are very large molecular weight structures and water soluble, they would not be readily absorbed into the skin (CIR, 2012). Experimentally, Lauramidopropyl betaine (50% component in cocamidopropyl betaine) was poorly absorbed from the intestinal tract (<10%) and through the skin (occluded: 2 to 6% absorption after 48h; unoccluded, rinsed after 10 min: < 0.2% absorption) (HERA, 2005).

Overall, when used at typical levels within consumer products this substance would not be expected to pose an undue risk of significant adverse effects. Due to the nature of the material as an irritant, the total concentration of all irritants within the final product should be considered. Assuming predicted systemic exposure is below the identified point of departure, no systemic effects would be expected.

References

CIR, 2012. Final report of the cosmetic ingredient review expert panel on the safey assessment of cocamidopropyl betaine (CAPB). International Journal of Toxicology 31(suppl 1):77S-111S

Mowad C. M. (2001). Cocamidopropyl Betaine Allergy. American Journal of Contact Dermatitis, Vol 12, No 4 (December), 2001: pp 223-224

Fowler JF, Fowler LM, Hunter JE (1997) Allergy to cocamidopropyl betaine may be due to amidoamine: A patch test and product use test study. Contact Dermatitis 37:276-281, 1997

De Groot AC, Vad Der Walle HB, Weyland JW (1995). Contact allergy to cocamidopropyl betaine. Contact Dermatitis 33:419-422.

HERA (2005). Cocamidopropyl betaine (CAPB) (CAS No: 61789-40-0, 70851-07-9, 4292-10-8). Edition 1.0. Available at: https://www.heraproject.com/files/45-HH-E101023F-D12F-6A30-DEB0770E9BF8E4D0.pdf (Accessed: 22 September 2020).

Margin(s) of Safety

Point of Departure - Animal Study:	300.0000mg/kg	**Exposure from Product**	0.22710933mg/kg	**Margin of Safety**	1320.94967

ANNEX II - INGREDIENT DATA

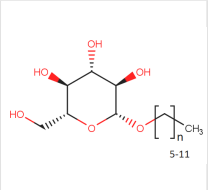
Cocamidopropyl Betaine

Acute Toxicity		LD50 = 6.9 g/kg
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Mouse	Oral, Feed	
Acute Toxicity		LD50 = 7.97 g/kg
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Rat	Oral, Gavage	
ADME		[read across Lauramidopropyl betaine] Topical (occluded): 2 to 6% absorption after 48h. Topical (unoccluded, rinsed after 10 min): < 0.2% absorption. Default value for oral absorption through intestinal tract set as 10% in the HEAR project based on in vivo data.
In vivo absorption study [Other]		
Rat	Dermal & Oral	
Carcinogenicity		Non-carcinogenic (0.09% active CAPB, 3 times weekly for 20 months, administered to interscapular skin. No adverse effects were noted on average body weight gains, survival, haematological or urinalysis values in any group. The incidence of neoplasm's in treated animals did not differ significantly from control.)
Carcinogenicity studies [Other]		
Mouse	Dermal	
Eye Irritation		Slightly Irritating [0.1ml instillation of 4.5% active solution of CAPB. Slight conjunctival erythema and chemosis were noted in all treated, unrinsed eyes by day 2 following instillation and subsided by day 7. Slight conjunctival irritation was observed in 2 of the 3 treated, rinsed eyes on the first 2 days of observation.]
Draize, Standard [OECD 405]		
Rabbit	Instillation	
Eye Irritation		Moderately irritating [30% active CAPB. Max mean score (unrinsed, n = 6) = 41.7 after 72h, decreased to 27.2 after 7 days (Scale 0 -110).]
Draize, Standard [OECD 405]		
Rabbit	Instillation	
Genotoxicity		Non-mutagenic, with and without metabolic activation. (31% active CAPB. S. typhimurium TA98, TA100, TA1535, TA1537, and TA1538. Up to 0.004, 0.02, 0.1, 0.2 and 0.4 uL/plate.)
Bacterial reverse mutation test (Ames) [OECD 471]		
Bacteria	In vitro exposure	
Repeated Dose		NOEL = 1000 mg/kg/day (28-day study with 0, 250, 500 and 1000 mg/kg bw (unspecified CAPB conc.). Oedema of the mucosa of the non-glandular stomach observed in the 1000 mg/kg dose group, no other effects noted. As the material is an irritant, this effect on the stomach lining is not considered relevant to the assessment of dermally applied consumer products.)
28-day Oral Toxicity Study [OECD 407]		
Rat	Oral, Gavage	
Repeated Dose		NOAEL (systemic) = 300 mg CAPB/kg bw/day. NOAEL (forestomach gastritis) = 75 mg CAPB/kg bw/day, effects attributed to irritating potential [0, 250, 500, 1000 mg 30 % active CAPB/kg bw for 5 days/week. 10/sex/dose. Effects on fertility: testes and ovaries weights were not affected and no histopathological changes in testes, prostate, uterus and ovaries.]
90-Day Oral Toxicity Study [OECD 408, OECD 409]		
Rat	Oral, Gavage	
Reproductive Toxicity		NOAEL (maternal toxicity) = 95 mg CAPB/kg bw/day based on reduced body weights and stomach ulcers. NOAEL (embryotoxicity, non-teratogenic) = 286 mg CAPB/kg bw/day based on increased post-implantation loss and decreased mean fetal body weights [0, 330, 990 & 3300 mg 28.9% active CAPB/kg bw from day 5-19 of pregnancy]
Prenatal Development Toxicity Study [OECD 414]		
Rat	Oral, Gavage	
Skin Irritation		Mildly Irritating [CAPB at 0.06% was used in a single insult occlusive patch test in 19 human subjects. 15 subjects had no irritation and a + score was recorded for 4 subjects.]
Patch Test, 24hr [Other]		
Human	Dermal	
Skin Irritation		Irritant [1.9% active CAPB in 0.3ml of 2 soap formulations applied to skin sites on the back for 21 consecutive days.]
Patch Test, 24hr [Other]		
Human	Dermal	
Skin Sensitisation		Non-sensitising (15 male guinea pigs were exposed to 0.05% and 1% active CAPB. No evidence of delayed contact hypersensitivity was found.)
Maximisation Test [OECD 406]		
Guinea Pig	Dermal	
Skin Sensitisation		Non-sensitising (0.75% active CAPB was applied to the shaved area on the left shoulder of 20 albino guinea pigs. The patch was removed after 6 hours and the area was rinsed with warm water. The procedure was repeated at the same site daily for 2 weeks.)
Repeat Insult Patch Test (RIPT) [Other]		
Guinea Pig	Dermal	
Skin Sensitisation		Non-sensitising (1.5% in 141 volunteers.)
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Coco-Glucoside	**Concentration in Product:**	0.558%	
CAS:	58846-77-8; 110615-47-9; 68515-73-1; 141464-42-8; 54549-25-6	**Dermal Exposure Level:**	0.000294780	mg/cm^2
Function:	Cleansing; Foaming; Surfactant	**Daily Body Burden:**	0.00816540mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	Yellow, visous liquid (with ca. 50% water)
pH	11.5 to 12.5 (with ca. 50% water)
Water Solubility	Soluble

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Coco-Glucoside is the product obtained by the condensation of coconut alcohol with glucose. The material is mainly used for its surfactant properties. Enzymatic breakdown can lead to glucose and fatty alcohols with a variety of chain lengths. While glucose is a typical food sugar, fatty alcohols are non-genotoxic, moderately irritating to skin/eyes and systemically well tolerated (high LD50). Although there is no data on the exact fraction of Coco-Glucoside (6-12 carbon chains), there is data on Alkylpolyglycoside C10-16.

Local effects, such as skin and eye irritation, are known for fatty alcohol glucosides. Hence Coco-Glucoside is classified by notifiers as H315/H319. However skin sensitization did not occur in related compounds. The compound's structure does not contain conjugated double bonds, therefore, it will not absorb UV light which is a prerequisite for phototoxicity.

Acute toxicity and repeated dose toxicity are low as demonstrated with LD50 and a no-observed-adverse-effect-level (NOAEL) of >1000 mg/kg bw/day from a 90-day repeat-dose toxicity study in rats. Furthermore the ingredient is not associated with genotoxicity.

In a 10% solution dermal absorption did not exceed 1% in an in vitro human skin assay. Due to the possibility of slightly higher concentration in the final product, which could theoretically increase dermal absorption slightly, a worst case scenario of 10% dermal absorption is assumed.

Fatty alcohol glucosides have a long history of safe use, particularly in rinse-off products. According to the Cosmetic Ingredient Review (CIR) report for Decyl Glucoside and other Alkyl Glucosides (CIR, 2013), Coco-Glucoside is safe to use in rinse-off products in concentrations up to 15% and in leave-on products up to 2%.

Overall, the incorporation of Coco-Glucoside at typical levels within a consumer product would not be expected to pose an undue risk of adverse effects.

References:

CIR, 2013. Safety assessment of decyl glucoside and other alkyl glucosides as used in cosmetics. International Journal of Toxicology 32(supple 3). 22S-48S

Margin(s) of Safety

Maximum Recommended Exposure	15.0000%	**Exposure from Product**	0.55800000%	**Margin of Exposure**	26.88
Point of Departure - Animal Study:	1000.0000mg/kg	**Exposure from Product**	0.00816540mg/kg	**Margin of Safety**	122467.975

ANNEX II - INGREDIENT DATA

Coco-Glucoside

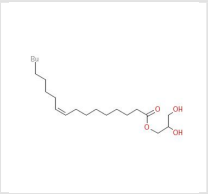
Acute Toxicity		LD50 > 5000 mg/kg bw
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Rat	Oral, Gavage	
Acute Toxicity		LD50 > 2000 mg/kg bw
Acute Dermal Toxicity, Lethality [OECD 402]		
Rabbit	Dermal	
ADME		< 1%
In vitro skin absorption [OECD 428]		
Human	Dermal	
Eye Irritation		Corrosive
Draize, Standard [OECD 405]		
Rabbit	Instillation	
Genotoxicity		Non-genotoxic
Mammalian erythrocyte micronucleus test [OECD 474]		
Mouse	Intraperitoneal	
Repeated Dose		NOAEL > 1000 mg/kg bw/day
90-Day Oral Toxicity Study [OECD 408, OECD 409]		
Rat	Oral, Gavage	
Skin Irritation		Irritating
Draize Test [OECD 404]		
Rabbit	Dermal	
Skin Sensitisation		Not sensitising
Local Lymph Node Assay [OECD 429, OECD 442A, OECD 442B]		
Mouse	In vitro exposure	
Skin Sensitisation		Not sensitising Induction and challenge: epicutaneous, occlusive patch, undiluted material
Buehler [OECD 406]		
Guinea Pig	Dermal	

ANNEX II - INGREDIENT DATA

Substance: Glyceryl Oleate
CAS: 68424-61-3; 25496-72-4; 67701-32-0; 111-03-5
Function: Perfuming; Emollient; Emulsifying

Concentration in Product: 0.558%
Dermal Exposure Level: 0.000294780 mg/cm^2
Daily Body Burden: 0.08165400mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	Pale Yellow Soft Solid or Liquid
Flash Point	154 Degrees C (Closed Cup)
Melting Point	35 Degrees C
Specific Gravity	0.95
Water Solubility	Dispersible

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

This substance is mono oleyl fatty ester of glycerine. When used in cosmetic products functions as a perfuming, emollient and emulsifying agent.

A sunscreen formulation containing 5% glyceryl oleate in rats was not toxic and produced no lethality at 13g/kg bw, and as such the oral LD50 is considered to be greater than 650 mg/kg bw.

As supplied, is classified as irritating to eyes by some REACH notifiers and may be expected to produce eye irritation following prolonged or excessive contact. Mildly irritating to the skin, but not known to be associated with significant allergenic potential. Has a long history of use in Cosmetics and Personal Care Products.

A no-observed-adverse-effect-level (NOAEL) of 1000 mg/kg bw/ day was identified from a Repeated Dose Toxicity Study with Reproductive and Developmental Screening in Rats. No adverse effects were observed and 1000 mg/kg bw/day was the highest tested dose. This is therefore likely to be a conservative point of departure.

The substance was not genotoxic in the Ames test.

The molecular weight is 356 and as such dermal absorption cannot be excluded, and is therefore considered as 100% for the purpose of risk assessment.

The Cosmetic Ingredients Review (CIR) Expert panel concluded that glyceryl oleate is safe for use in cosmetics in present practices of use and concentration. The maximum reported uses were 5% in rinse off products and 3% in leave on products.

Under normal conditions of use the incorporation of glyceryl oleate in consumer products at low levels would not be expected to pose an undue risk of significant adverse effects.

References

CIR, 2015. Safety Assessment of Monoglyceryl Monoesters as Used in Cosmetics

Margin(s) of Safety

Point of Departure - Animal Study: 1000.0000mg/kg
Exposure from Product 0.08165400mg/kg
Margin of Safety 12246.7975

ANNEX II - INGREDIENT DATA

Glyceryl Oleate

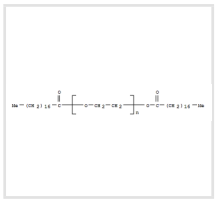
Acute Toxicity		5% glyceryl oleate in a scunscreen formulation: 13 g/kg did not produce toxicity nor lethality (5% : 650 mg/kg)
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Rat [NOS]	Oral, NOS	
Carcinogenicity		200 mg/mouse/day (approx 10g/kg/day): digestive tract tumors; considered due to free fatty acid impurities. Very high dose. CIR panel considered the results as equivocal
Carcinogenicity studies [Other]		
Mouse [NOS]	Oral, NOS	
Eye Irritation		50% Glyceryl Oleate in corn oil. Minimal eye irritation. Mean score = 1 (Max. 110) on Day 1 following treatment
Draize, Standard [OECD 405]		
Rabbit	Instillation	
Eye Irritation		Glyceryl Oleate undiluted. Minimal eye irritation. Mean score = 1 (Max. 110) on Day 1 following treatment
Draize [Other]		
Rabbit	Instillation	
Eye Irritation		19% Glyceryl Oleate in fragrance preparation. Moderate eye irritation. Mean score: 12 on Day 1, 8 on Days 2 and 3, 6 on Day 4, 2 on Day 7.
Draize [Other]		
Rabbit	Dermal	
Reproductive Toxicity		0, 100, 300, 1000 mg/kg for 14 days prior to mating, and until day 4 of lactation. NOAEL (systemic, fertility and development): 1000 mg/kg/day
Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test		
Rat	Oral, Gavage	
Skin Irritation		Minimal skin irritation. SIPT, PII = 0.72 (max. 8.00).
Draize Test [OECD 404]		
Rabbit	Dermal	
Skin Sensitisation		50% Glyceryl Oleate in paraffin oil tested om 107 healthy subjects, did not induce irritation or sensitisation.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	
Skin Sensitisation		15% Glyceryl Oleate aqueous solution. Test for skin irritation by Draize-Shelanski SIOPT in 20 subjects. 18/20 had score of 0; l/20 had score of l/2; l/20 had score of 1 (max = 3).
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance: PEG-3 Distearate
CAS: 9005-08-7; 91031-45-7
Function: Emulsifying

Concentration in Product: 0.4%
Dermal Exposure Level: 0.000211312 mg/cm^2
Daily Body Burden: 0.05853333mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	Solid
Flash Point	> 113.00 °C - closed cup
Melting Point	35 - 37 °C
Water Solubility	Soluble

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

A polyethylene glycol diester of stearic acid. Used as emulsifying, cleansing and solubilizing agents in a wide variety of cosmetic formulations. In general, low level toxicity and low ocular irritation. Based on clinical data PEGs are mild irritants/sensitizers on damaged skin. The Cosmetic Ingredient Review (CIR) expert panel concluded that PEG-3, 4, 6, 8, 9, 12, 20, 32, 50, 75, 120, 150 and 175 distearate are safe for use in cosmetic formulations under the present practices of use. The highest quoted concentration of PEG-3 Distearate in leave-on products was 1.5%

A no-observed-adverse-effect-level (NOAEL) was not available for review however, based on the long history of safe use and CIR review, the use of this material at typical levels would not be expected to pose an undue risk of significant adverse effects.

Margin(s) of Safety

Maximum Recommended Exposure 1.5000% **Exposure from Product** 0.40000000% **Margin of Exposure** 3.75

ANNEX II - INGREDIENT DATA

PEG-3 Distearate

Details on specific toxicological studies related to endpoints of concern are not available for PEG-3 Distearate, please see the previous page for a justification of safety based on history of use &/or weight of evidence.

ANNEX II - INGREDIENT DATA

Substance:	Perfume - CARING EFF308818 - European Flavours & Fragrances PLC	**Concentration in Product:**	0.4%	
CAS:	Mixture	**Dermal Exposure Level:**	0.000211312	mg/cm^2
Function:	Perfuming	**Daily Body Burden:**	0.05853333mg/kg	

Chemical Structure

No Structure Available

Physical/Chemical Characteristics

Odour	Characteristic
Flash Point	> 62 °C

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

The supplied fragrance is classified H317 according to manufacturer's SDS. When used in a leave-on cosmetic product at a concentration of up to 2% the concentration of each potential allergen will be at least 10 x lower than the concentration shown not to cause allergy in human trials.

It should be noted that the full composition of the fragrance has not been disclosed and therefore the manufacture must ensure that the fragrance does not contain any materials which are prohibited for the intended use.

The fragrance contains 0.1-<1% Methyl paracresol (CAS No. 104-93-8) which is self-classified as H361 according to manufacturer's SDS.

While the fragrance material at or below a concentration of 2% is not expected to result in adverse effects in the majority of users, it must be noted that individuals with a pre-existing allergy to one or more of the components may react adversely at levels lower than this. IFRA guidelines indicate that the fragrance is suitable for use in Bath products (Class 9) under the 49th Amendment at a concentration of 3.25%.

Margin(s) of Safety

Maximum Recommended Exposure	2.0000%	**Exposure from Product**	0.40000000%	**Margin of Exposure**	5.00

ANNEX II - INGREDIENT DATA

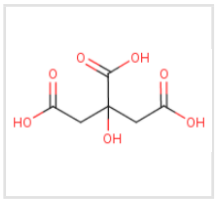
Perfume - CARING EFF308818 - European Flavours & Fragrances PLC

Details on specific toxicological studies related to endpoints of concern are not available for Perfume - CARING EFF308818 - European Flavours & Fragrances PLC, please see the previous page for a justification of safety based on history of use &/or weight of evidence.

ANNEX II - INGREDIENT DATA

Substance:	Citric Acid	**Concentration in Product:**	0.224%	
CAS:	77-92-9; 5949-29-1	**Dermal Exposure Level:**	0.000118335	mg/cm^2
Function:	Buffering; Chelating; Masking	**Daily Body Burden:**	0.03277867mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	Crystalline powder	Melting Point	approx 100˚C to 153˚C
Boiling Point	175 C	Odour	None
Flammability	Auto ignition temperature 1010 C	pH	1.8 (5% solution)
Log Kow	- 1.72	Specific Gravity	1.665 @18˚C
Molecular Mass	192.12		

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

A water soluble organic acid and a ubiquitous natural substance that appears as an intermediate in the basic physiological citric acid cycle in every eukaryote cell. It is a normal constituent of a number of foodstuffs, and for many years added to processed food and beverages, used in pharmaceutical preparations and in household cleaners. In cosmetics, it primarily serves as a buffering, chelating, or masking agent.

It is not acutely toxic with a high oral and dermal LD50. In-vivo studies show it is non-irritating to the skin, and the sensitising potential is seen as low based on the few reports on its intolerance. As for eye irritancy, it was minimally irritating to rabbit eyes at 10% and moderately irritating at 30%. pH of the final formulation is expected to play a significant role in its irritancy potential.

Although citric acid can be considered an Alpha Hydroxy Acid (AHA), which are known for their phototoxic potential, it is also a Beta-hydroxy acid. Structurally, citric acid is a tricarboxylic acid, and as such, has a unique functionality and is chemically and biologically distinct from the AHAs (ie, glycolic and lactic acid). Therefore, the concerns that stem from the phototoxic potential of AHAs is not considered relevant to citric acid and its inorganic salts and alkyl esters (CIR, 2014).

The substance is not expected to be genotoxic or carcinogenic, based on mostly negative results in in-vitro and in-vivo assays: but was genotoxic in mammalian cell micronucleus test tested without metabolic activation (It is possible that they are related to hydroxyl radicals formation). It was found to be negative in in-vivo mammalian bone marrow chromosome aberration test and Rodent dominant lethal test. The compound was also not carcinogenic in 2 year chronic study in rats. Moreover, citric acid is used as a food additive and is generally regarded as safe (GRAS) when used as a direct food substance 21CFR184.1033, April 1, 2018. Based on the weight of evidence approach it is not expected to cause genotoxic effects.

One reproductive toxicity study in rats reported a no-observed-effect-level (NOEL) of 2500 mg/kg bw/day. The no-observed-adverse-effect-level (NOAEL) from a 2 year feeding study in rats was concluded to be 1200 mg/kg bw/day, and no tissue abnormalities were observed. Only slightly decreased growth was observed, and as such may be conservative. The Joint FAO/WHO Expert Committee on Food Additives (JECFA) attributed a 'Not Limited' acceptable daily intake (ADI) to citric acid, in 1973, but this value of 1200 mg/kg bw/day was conservatively chosen to be the point of departure for systemic toxicity evaluation.

As dermal absorption is dependent on the molecular properties, concentration, exposure time and vehicle simultaneously, in the absence of relevant experimental data it is difficult to assess an exact value. If not stated otherwise within the risk assessment, we assume 100% dermal absorption, however it must be noted that for the majority of compounds, even low molecular weight, lipophilic compounds, dermal absorption is expected to be significantly lower than 100%.

The Cosmetic Ingredient Review (CIR) Expert Panel (2014) found it was used up to 4% in leave-on products, up to 10% in rinse-off products, and up to 39% in products intended to be diluted for (bath) use. The panel also concluded that citric acid is safe in the present practices of use and concentration. Aside from the risk of eye irritancy, this material is unlikely to produce significant localised or systemic toxicity at the typical levels used within consumer products.

References:
CIR, 2014. Safety Assessment of Citric Acid, Inorganic Citrate Salts and Alkyl Citrate Esters as Used in Cosmetics. International Journal of Toxicology 33(suppl 2):16S-46S

JECFA, 1973. WHO Food Additives Series No. 5. Citric Acid and Its Calcium, Potassium and Sodium Salts. (FAS 5/NMRS 53A-JECFA 17/170)

CFR - Code of Federal Regulations Title 21, 21CFR184.1033, April 1, 2018 https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=184.1033

Margin(s) of Safety

Point of Departure - Animal Study:	1200.0000mg/kg	**Exposure from Product**	0.03277867mg/kg	**Margin of Safety**	36609.1767

ANNEX II - INGREDIENT DATA

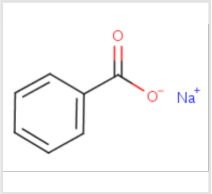
Citric Acid

Acute Toxicity Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		Oral LD50 mouse: 5400 mg/kg
Mouse	Oral, Gavage	
Acute Toxicity Acute Dermal Toxicity, Lethality [OECD 402]		Dermal LD50 rat > 2000 mg/kg
Rat	Dermal	
Carcinogenicity Carcinogenicity studies [Other]		Negative in rat oral feed study, 2g/kg /day for 2 years (IUCLID)
Rat	Oral, Feed	
Eye Irritation Draize, Standard [OECD 405]		Weakly irritating at 10%; moderately irritant at 30%. 3 animals/dose 10% and 30% tested (0.1ml) Not irritating according to GHS criteria, but slight effects are observed at 10%, particularly redness of conjuctivae (and more important at 30%).
Rabbit	Instillation	
Eye Irritation In vitro Eye Irritation [Other]		EYTEX assay - Undiluted - Severe/extreme irritant; EDE > 51
In-vitro culture	Instillation	
Genotoxicity Bacterial reverse mutation test (Ames) [OECD 471]		Not mutagenic TA 1535, TA 100, TA 98, TA 1537, TA92 and TA 94; +/- S9 mix, up to 5000µg/plate
Bacteria	In vitro exposure	
Genotoxicity Mammalian cell micronucleus test [OECD 487]		Clastogenic 50, 100, 200, 3000 µg/ml Tested without S9.
Human	In vitro exposure	
Genotoxicity In vivo genotoxicity assay [Other]		Negative for the induction of dominant lethals under the conditions of the study.
Rat	Oral, Gavage	
Genotoxicity Mammalian chromosome aberration test [OECD 473]		Not genotoxic, only tested without S9 mix
Human	In vitro exposure	
Genotoxicity Mammalian chromosome aberration test [OECD 473]		Genotoxic only tested without S9 mix, relevant data at up to 200 µg/ml, citric acid being cytotoxic at the highest tested level of 3000. Slight, dose-dependant positive effects.
In-vitro culture	In vitro exposure	
Genotoxicity In vivo genotoxicity assay [Other]		Not mutagenic Rodent Dominant Lethal Test test 1: 1.2, 12.0, 120 mg/kg bw; test 2; 300, 500, 3500 mg/kg bw
Rat	Oral, Gavage	
Genotoxicity Mammalian bone marrow chromosome aberration test [OECD 475]		Not mutagenic 5/sex/dose. test 1: 1.2, 12.0, 120 mg/kg bw; test 2; 300, 500, 3500 mg/kg bw
Rat	Oral, Gavage	
Repeated Dose Repeat Dose Oral Toxicity Study [Other]		NOAEL = 1200 mg/kg/day. Oral, dietary, deed containing 5% and 3% citric acid on rat for 2 years, slightly decreased growth was observed but no tissue abnormalities were found on examination of the major organs.
Rat	Oral, Feed	
Reproductive Toxicity In vivo reproductive toxicity study [Other]		NOEL = 2500 mg/kg/d oral, dietary, feed containing 5% citric acid to female rats prior, during and subsequent to mating; no harmful effects reported
Rat	Oral, Feed	
Skin Irritation Draize Test [OECD 404]		Not irritating - rabbits Well defined erythema in 1/6 from 1-48 h; mild erythema in the same animal was still evident at 72h when study was terminated.
Rabbit	In vitro exposure	
Skin Sensitisation Repeat Open Application Test (ROAT) [Other]		Patch testing of 60 eczema patients with 2.5% citric acid in petrolatum did not produce any irritant or allergic reactions Genuine sensitisation to citric acid seems to be a rare phenomenon.
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Sodium Benzoate	**Concentration in Product:**	0.19%	
CAS:	532-32-1	**Dermal Exposure Level:**	0.000100373	mg/cm^2
Function:	Anticorrosive; Masking; Preservative	**Daily Body Burden:**	0.02780333mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	White solid	Melting Point	410 to 430°C
Flammability	Autoifnition > 500°C	Odour	None
Flash Point	> 100 °C	pH	9 (100 g/L @ 20°C)
Log Kow	-2.27	Specific Gravity	1.44
Molecular Mass	144.11		

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Sodium Benzoate is a sodium salt of benzoic acid and a well-established preservative with a long history of safe use in a variety of Consumer Products including Food and Cosmetics. It is an approved food additive in the EU (E211) and given the generally recognised as safe (GRAS) status by US FDA Select Committee on Generally Recognised as Safe Substances (SCOGS) as a direct food substance with maximum level of 0.1% in food (FDA, 2018). In cosmetics it primarily serves as an anticorrosive, masking and preservative agent. The ingredient is an approved preservative for use in cosmetic products in the EU, with the following maximum concentration limits according to Annex V Entry 1 of the European Cosmetic Regulation: Rinse-off products, except oral care products at 2.5% (as acid); Oral care products at 1.7% (as acid); Leave-on products at 0.5% (as acid). As Sodium Benzoate is 84.7% Benzoic Acid by weight, the actual concentration corresponds to 2.9%, 1.97% and 0.59%, respectively (EC, 2018).

Neat application may cause irritation to eyes, but no dermal irritating effects is expected based on animal data. It is demonstrated to be non-phototoxic in human erythrocyte suspensions.

Regarding skin sensitisation, human clinical study testing unspecified concentration of Sodium Benzoate reported positive reactions in 1.9% of treated patients, however it was suggested that the positive reactions observed were actually nonimmunologic contact urticaria. Read-across data from Benzoic acid, the free acid of Sodium benzoate is also available. It should be emphasised that Sodium benzoate dissolves in water to Benzoic acid and Sodium ions and therefore the read-across candidate is addressing the same chemical entity as the query compound. In the Local Lymph Node Assay (LLNA), there was no indication that Benzoic Acid at 5, 10 and 20% could elicit skin sensitisation. In addition, Sodium benzoate has a long history of use (in 2017, the Cosmetic Ingredient Review (CIR) Panel of Experts reported the presence of this ingredient in a total of 1570 products) combined with low incidence of sensitisation reports. Taken together, this ingredient is unlikely to be a skin sensitiser.

The ingredient is practically non-toxic from acute oral, dermal and inhalation exposures. A feeding study of up to 24 months did not identify any significant toxicological effects at the highest treatment dose of 2%. Long term inhalation exposure may be associated with pulmonary effects and changes in organ and body weights. The ingredient was demonstrated to be non-genotoxic in both in-vitro and in-vivo studies, and no carcinogenic effects were found in-vivo. Prenatal development toxicity study found no effects on maternal and developmental toxicity at the highest dose of 175 mg/kg bw/day.

As dermal absorption is dependent on the molecular properties, concentration, exposure time and vehicle simultaneously, in the absence of relevant experimental data it is difficult to assess an exact value. If not stated otherwise within the risk assessment, we assume 100% dermal absorption, however it must be noted that for the majority of compounds, even low molecular weight, lipophilic compounds, dermal absorption is expected to be significantly lower than 100%.

The Joint FAO/WHO Expert Committee on Food Additives (JECFA, 1998) has set an acceptable daily intake (ADI) as 5 mg/kg bw for this group of preservatives (benzoic acid, the benzoate salts (calcium, potassium and sodium), benzaldehyde, benzyl acetate, benzyl alcohol and benzyl benzoate, expressed as benzoic acid equivalents). This value is chosen as the point of departure for the assessment. In 2017, the CIR Expert Panel reported the use of up to 1% in cosmetic products, and the Panel concluded it is safe in the practices of use and concentration described in the assessment (CIR, 2017). The Scientific Committee on Consumer Product (SCCP) reviewed the use of Sodium Benzoate in 2005 (SCCP, 2005) and concluded in their opinion that Sodium Benzoate was safe to use in oral care products up to a maximum concentration of 1.7% and cosmetic rinse-off products up to 2.5% and other leave-on products at up to 0.5% (all expressed as acid).

When used at or below the legal limits for incorporation in cosmetic and consumer products, this material would be considered unlikely to produce significant localised or systemic toxicity.

References:
CIR (2017). Safety assessement of benzyl alcohol, benzoic acid and its salts and benzyl benzoate. International Journal of Toxicology. 36(suppl 3):5S-30S.

EC (2018). EC Regulation No. 1223/2009 on cosmetic products (01.08.2018).

FDA (2018). Code of Federal Regulations Title 21, chapter I, subchapter B, part 184, subpart B, section 184.1733 Sodium benzoate (01.04.2018).

JECFA (1998). 020. Benzoate, sodium (FAO Nutrition Meetings Report Series 40abc).

SCCP (2005). Scientific Committee on Consumer Products. Opinion on Benzoic acid and sodium benzoate (SCCP/0891/05).

https://echa.europa.eu/substance-information/-/substanceinfo/100.007.760

Margin(s) of Safety

Point of Departure - Human Data:	5.0000mg/kg	**Exposure from Product**	0.02780333mg/kg	**Margin of Safety**	179.834552

ANNEX II - INGREDIENT DATA

Sodium Benzoate

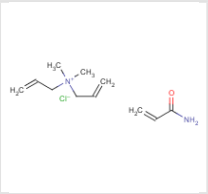
Acute Toxicity Acute Toxicity, Lethality [Other]		LD50 = 3140 mg/kg bw (practically non-toxic)
Rat	Oral, Gavage	
Acute Toxicity Acute Toxicity, Lethality [Other]		LC50 > 12200 mg/m³ [Dust of 12200 mg/m³, 4hr exposure]
Rat	Inhalation	
Acute Toxicity Acute Toxicity, Lethality [Other]		LD50 > 2000 mg/kg bw [Semi-occlusive, fixed dose 2000 mg/kg, 24hr exposure]
Rabbit	Dermal	
Carcinogenicity Combined chronic toxicity/carcinogenicity studies [Other]		NOAEL > 1 000 mg/kg bw/day (no evidence of carcinogenicity) [Concentration: 1% and 2% in diet (approx. 500 and 1000 mg/kg bw/day), exposure for 18 to 24 months]
Rat	Oral, Feed	
Eye Irritation Draize, Standard [OECD 405]		Slightly irritating (Classified as Category 2, irritation of the conjunctivae was reversible within 14 days) [Undiluted, 60mg, 24hr exposure]
Rabbit	Instillation	
Genotoxicity Bacterial reverse mutation test (Ames) [OECD 471]		Not mutagenic with and without metabolic activation at up to 10 mg/plate.
Bacteria	In vitro exposure	
Genotoxicity In vitro genotoxicity assay [Other]		No significant aberration in the anaphase chromosomes of human tissue culture cells at up to 200.0 mg/mL. [Mammalian chromosome aberration study]
In-vitro culture	In vitro exposure	
Genotoxicity Mammalian bone marrow chromosome aberration test [OECD 475]		No detectable significant increase in the number of aberrations in bone marrow metaphase chromosomes [Concentrations: 50, 500 and 5000 mg/kg, once a day for 5 consecutive days]
Rat	Oral, Gavage	
Phototoxicity In vitro phototoxicity [other]		Not phototoxic in the presence of UVA or UVB light. [Concentration: 10^-3 mol/L, 1hr expousre]
In-vitro culture	In vitro exposure	
Repeated Dose Repeat Dose Oral Toxicity Study [Other]		NOAEL = 2% in diet (equivalent to 1000 mg/kg bw/day) (No findings of toxicological significance at highest treatment dose) [Concentrations: 1 or 2% in feed, exposure for 18 to 24 months.]
Rat	Oral, Feed	
Repeated Dose 28-day Inhalation Toxicity Study [OECD 412]		NOAEC (local effects) < 25 mg/m³ (Pulmonary fibrosis and inflammatory cell infiltrate at lowest dose level) NOAEC (systemic) = 250 mg/m³ (Decrease in organ and body weight at higher doses) [Dust exposure at 25, 250, 1200 mg/m³ , mean equivalent aerodynamic diameter of 4.7 µm]
Rat	Inhalation	
Reproductive Toxicity Prenatal Development Toxicity Study [OECD 414]		NOAEL >= 175 mg/kg bw/day (no effects on maternal and developmental toxicity at the highest dose) [Concentrations are 1.75, 8.0, 38.0, and 175.0 mg/kg bw/day, exposure from GD6-15]
Rat	Oral, Gavage	
Skin Irritation Draize Test [OECD 404]		Not irritating (PII score = 0) [Undiluted, semi-occlusive, shaved, 0.5g, 4hr exposure]
Rabbit	Dermal	
Skin Sensitisation Local Lymph Node Assay [OECD 429, OECD 442A, OECD 442B]		Read-across from benzoic acid: Not sensitising (The SI values for 5%, 10% and 20% were 0.8, 0.9 and 0.8 respectively. No indication that the test substance could elicit an SI >=3 when tested on higher concentrations)
Mouse	Dermal	
Skin Sensitisation Repeat Open Application Test (ROAT) [Other]		Positive reactions in 1.9% of patients (It has been suggested that the positive reactions observed were actually nonimmunologic contact urticaria) [465 patients, Unknown concentration or procedure]
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance: Polyquaternium-7
CAS: 108464-53-5; 26590-05-6
Function: Film Forming; Antistatic

Concentration in Product: 0.18%
Dermal Exposure Level: 0.000095090 mg/cm^2
Daily Body Burden: 0.02634000mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	Colourless to pale yellow liquid
Flash Point	>100C
pH	5.0 - 7.0
Specific Gravity	1.014 (25.0 °C)
Viscosity	11,000.0 cps (25.0 °C)
Water Solubility	Soluble

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Copolymer of acrylamide and diallyldimethylammonium chloride. As supplied this material is minimally irritating to skin and eye. Being a polymeric material, it is unlikely to have significant dermal absorption and is also unlikely to have significant allergenic activity.

Found to be non-genotoxic, non-phototoxic, a slight eye irritant and a slight skin irritant. Also found to have high Oral and Dermal LD50 values. Within Cosmetics in the EU, Composition is controlled in respect to residual acrylamide content (maximum residual acrylamide levels : 0.1 mg/kg (leave-on), 0.5mg/kg (other products),)

The CIR has reviewed Polyquaternium-7 and concluded that use in cosmetics was safe at reported concentrations: 0.009-5 % in a total of 947 products (CIR 2011).

A NOAEL was not available for review. However, on the basis of the available data and the history of safe use in Consumer Products, under normal conditions of use incorporation of this material at low levels within a product would not be expected to pose an undue risk of significant adverse effects as long as the levels of acrylamide impurities do not surpass the minimum purity specifications listed in annex III of the EU cosmetics regulation.

References:
CIR 2011: Annual review of Cosmetic ingredient safety assessments: 2007-2010. International Journal of Toxicology. 30(supplement 2) 73S-127S.

Margin(s) of Safety

ANNEX II - INGREDIENT DATA

Polyquaternium-7

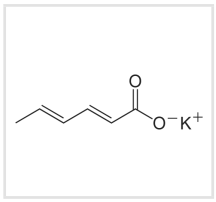
Acute Toxicity		LD50 > 39,800 mg/kg
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Rat	Oral, Gavage	
Acute Toxicity		LD50 > 21500 mg/kg
Acute Dermal Toxicity, Lethality [OECD 402]		
Rat	Dermal	
Eye Irritation		Slight irritant (At 15 minutes and 2 hours, slight discharge was seen in all treated eyes and 3 eyes had slight conjunctival irritation. By 24 hours, all treated eyes appeared normal and there was no other irritation noted in the 2 week observation period.)
Draize [Other]		
Rabbit	Instillation	
Genotoxicity		Non mutagenic with and without metabolic activation.
Bacterial reverse mutation test (Ames) [OECD 471]		
Bacteria	In vitro exposure	
Phototoxicity		Not phototoxic. 72 hour patch test with 29 participants. None of the participants exhibited irritation, sensitisation or photosensitisation to the treatment from applications of 0.3mL of an 8% aqueous solution of Polyquaternium-7.
In vivo phototoxicity		
Human	Dermal	
Skin Irritation		Non-irritating 0.5mL of 8% solution of Polyquaternium-7 in water.
Draize Test [OECD 404]		
Rabbit	Dermal	
Skin Sensitisation		Considered a very mild cumulative irritant. Modified Shelanski repeated insult patch test with 106 participants. The test material produced an irritant response in 3 of the participants. During the challenge phase, 5 participants had a sensitisation reaction. 4 of the 5 reactions were scored as 1.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	
Skin Sensitisation		An RIPT with 155 participants conducted with the same protocol as above, except with 1 week of nontreatment between induction and challenge. 2 of the participants responded with faint erythema which disappeared with 24 hours.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance: Potassium Sorbate
CAS: 590-00-1; 24634-61-5
Function: Preservative

Concentration in Product: 0.09%
Dermal Exposure Level: 0.000047545 mg/cm^2
Daily Body Burden: 0.01317000mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	White solid
Odour	Odourless
Melting Point	250°C
Density	1.36
Vapour Pressure	0 hPa at 20°C
Water Solubility	1.95 g/L at 20°C
Explosive Properties	non explosive
pH	7.75 - 7.77
Viscosity	17.4 - 19.3 mPa s

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

A preservative with a good history of safe use and widely used to preserve plant extracts, particularly at slightly acidic pH (approx 4.5, with an upper effective limit often defined as 6.5). It is authorised as a food additive (E 202) in the EU.

The substance has a high oral LD50, is not irritating to the skin and shows no evidence of significant allergenic potential. However, potassium sorbate is classified (harmonised) as Irritating to the eye in the neat form in the EU, but at the levels typically seen in Consumer Products would be considered unlikely to provoke significant levels of irritation.

The compound contains conjugated double bonds, which is a prerequisite for phototoxicity. However, when tested at 0.01% in an eye makeup remover formulation, it was not a photosenistiser in 102 subjects. This ingredient and sorbic acid have a long history of use in cosmetics (in 1988, the Cosmetic Ingredient Review (CIR) reported the presence of sorbic acid and potassium sorbate in a total of 445 and 117 products, respectively, with a typical level of inclusion ranging from 0.1 to 1%), and a low incidence of adverse effect reports in the literature, suggesting photosensitising potential is minimal.

It is not mutagenic and there are no indications of carcinogenicity in long-term feeding studies.

A NOAEL of 6800 mg/kg bw/day was identified in a 90-day repeat dose oral toxicity study with sorbic acid in the ECHA registration dossier for this substance: the dossier states that "extrapolation from sorbic acid to potassium sorbate is considered not to be restricted in any way, since the determinant of potential toxicity is on the "sorbate" anion". This was the highest tested dose and thus cannot be considered as a "true" no-observed-adverse-effect-level (NOAEL),

In reproductive and developmental toxicity studies, the administration of up to 340 mg/kg bw of potassium sorbate in rats had no discernible adverse effects. In an two-generation reproductive toxicity study with sorbic acid in rats, the NOAEL for parental toxicity is 1000 mg/kg bw/day and NOAEL for developmental toxicity is 300 mg/kg bw/day. In another prenatal development toxicity study with sorbic acid in rabbits, the NOAEL was 300 mg/kg bw/day for both maternal and fetuses toxicity. Therefore, the lowest NOAEL of 300 mg/kg bw/day is selected as the point of departure (PoD) for safety evaluation.

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) has established an acceptable daily intake (ADI) of 25 mg/kg bw/day as part of its evaluation on its use as a flavouring ingredient (JECFA, 1973), but this value was revised to 3 mg/kg/day for sorbic acid and its potassium salt by the European Food Safety Authority (EFSA) in 2015 based on the NOAEL of 300 mg/kg bw/day from the two-generation reproductive toxicity study in rats.

As dermal absorption is dependent on the molecular properties, concentration, exposure time and vehicle simultaneously, in the absence of relevant experimental data it is difficult to assess an exact value. If not stated otherwise within the risk assessment, we assume 100% dermal absorption, however it must be noted that for the majority of compounds, even low molecular weight, lipophilic compounds, dermal absorption is expected to be significantly lower than 100%.

Overall, considering its history of use in food and in cosmetics, use of the material at or below the levels legally permitted as a preservative within Cosmetic in the EU (0.6% as acid) would be considered unlikely to produce significant adverse effects. The general principles of risk assessment should apply, and a product containing less than 0.6% (as acid) should also be assessed towards MoS to estimate the level of safety.

References

EFSA, 2015. Scientific Opinion on the re-evaluation of sorbic acid (E 200), potassium sorbate (E 202) and calcium sorbate (E 203) as food additives. EFSA Journal 2015. 13(6), 4144.

JECFA, 1973. Toxicological evaluation of some antimicrobials, antioxidantsn emulsifiers, stabilizers, flour-treatment agents, acids and bases. WHO/Food Add./67.29

CIR (1998). Final Report on the Safety Assessment of Sorbic Acid and Potassium Sorbate. JACT 7(6):837-880,

Margin(s) of Safety

Maximum Recommended Exposure	0.8000%	**Exposure from Product**	0.09000000%	**Margin of Exposure**	8.89
Point of Departure - Animal Study:	300.0000mg/kg	**Exposure from Product**	0.01317000mg/kg	**Margin of Safety**	22779.0433
Point of Departure - Human Data:	3.0000mg/kg	**Exposure from Product**	0.01317000mg/kg	**Margin of Safety**	227.790433

ANNEX II - INGREDIENT DATA

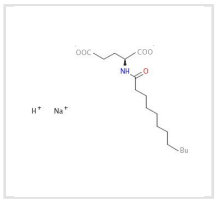
Potassium Sorbate

Acute Toxicity Acute Dermal Toxicity, Lethality [OECD 402]		[read-across from sorbic acid] LD50 = 9600 mg/kg (female); 12500 mg/Kg (male) 8/sex/dose. 0, 3.8, 5.1, 6.9, 9.3, 12.5, 16.9 g/kg.
Rat	Oral, Gavage	
Acute Toxicity Acute Dermal Toxicity, Lethality [OECD 402]		[read-across from sorbic acid] LD50 > 2000 mg/kg 5/sex/dose. Semiocclusive conditions; 24H exposure.
Rat	Dermal	
Eye Irritation Draize, Standard [OECD 405]		Irritating. 3 animals. 0.1 g /eye. 24h exposure. observation period: 21 days. Effects fully reversibility was noted after 21 days.
Rabbit	Instillation	
Genotoxicity Bacterial reverse mutation test (Ames) [OECD 471]		Not mutagenic 0, 2, 10, 50, 100, 200 µg/plate +/- S9
Bacteria	In vitro exposure	
Genotoxicity Mammalian cell gene mutation test [OECD 476]		Not mutagenic Method followed: Hsie et al, 1979 CHO cells. 0, 10 000 and 20 000 µg/mL +/- S9
Hamster	In vitro exposure	
Phototoxicity In vivo phototoxicity		[Read-across from sorbic acid] An eye makeup remover formulation containing 0.01% sorbic acid was not photosenistizer. 102 subjects. Patch test with and without UV. Eye makeup remover was nonirritating, nonsensitising and nonphotosensitising.
Human	Dermal	
Repeated Dose 28-day Oral Toxicity Study [OECD 407]		[Read-across from sorbic acid] NOAEL > 100000 ppm (approx 9200 mg/kg/day in males, 8600 in females) 10/sex/dose in group 1 and 4 and control; 5 in groups 2 and 3 Dose: 0, 25 000, 50 000 and 100 000 ppm
Rat	Oral, Feed	
Repeated Dose 90-Day Oral Toxicity Study [OECD 408, OECD 409]		[read across sorbic acid] NOAEL = 100,000 ppm (6800 mg/kg/day for males, 7200 for females) 25000, 50 000 and 100 000 ppm 20/sex/dose
Rat	Oral, Feed	
Reproductive Toxicity Two-Generation Reproduction Toxicity [OECD 416]		[Read-across from sorbic acid] NOAEL F0: 1000 mg/kg/day; F1 & F2: 300 mg/kg/day (F0: 30/sex/dose; F1: 25/sex/dose. 0, 300, 1000, 3000 mg/kg/day. Reduced body weight, assumed to be related to decreased food intake, in F0 and F1 (not adverse) Sexual maturity slightly but significantly delayed in high group F1 (therefore LOAEL = 3000))
Rat	Oral, Gavage	
Reproductive Toxicity Prenatal Development Toxicity Study [OECD 414]		NOAEL: 340 mg/kg bw/day for material toxic, and embryotoxic/ teratogenic effects The administration of up to 340 mg/kg bw of potassium sorbate had no clearly discernible effect on nidation or on maternal or foetal survival. The number of abnormalities did not differ from controls. EU Method B.31 (Prenatal Developmental Toxicity Study)
Rat	Oral, Gavage	
Reproductive Toxicity Prenatal Development Toxicity Study [OECD 414]		[Read-across from sorbic acid] NOAEL = 300 mg/kg bw/day for material toxic and embryotoxic/ teratogenic effects. Doses: 300, 1000 or 3000 mg/kg bw/day.
Rabbit	Oral, Gavage	
Skin Irritation Draize Test [OECD 404]		Not irritating. 3 animals; 4h exposure. 72h observation period. Irritation scores = 0
Rabbit	Dermal	
Skin Sensitisation Maximisation Test [OECD 406]		[Read-across from sorbic acid] Not sensitising 10/sex/dose. Induction:0.1% intracutaneous; first challenge 0.1% intracutaenous; second challenge: 1% epicutaneous
Guinea Pig	Subcutaneous	

ANNEX II - INGREDIENT DATA

Substance:	Sodium Lauroyl Glutamate	**Concentration in Product:**	0.033%	
CAS:	98984-78-2; 29923-31-7; 29923-34-0; 42926-22-7	**Dermal Exposure Level:**	0.000017433	mg/cm^2
Function:	Antistatic; Hair Conditioning; Surfactant	**Daily Body Burden:**	0.00482900mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	Clear Light Yellow Liquid
Boiling Point	> 100 C
Melting Point	< 0 C
pH	9 to 10
Specific Gravity	1.1 to 1.2 @ 20 C
Viscosity	>300 mPa.s @ 20 C

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Sodium Lauroyl Glutamate is the sodium salt of the lauric acid amide of glutamic acid. An amino acid that is used as a hair conditioning agent. No reports in the literature of adverse effects. Compounds with similar structure are widely used in cosmetics. Not expected to produce adverse effects on health.

It is commonly used in cosmetics, and it has been reported in concentrations between 0.003% and 40% where the highest concentrations are found in rinse-off products (CIR 2017).

Sodium lauroyl glutamamte has been shown to not cause phototoxic reactions, however, details of the study are not given (CIR 2017).

The ECHA registration dossier mentions a read-across repeated-dose study, with N-cocoacyl glutaminic acid, in male rats with a NOAEL of 1200 mg/kg bw/day. Only one dose was tested for 112 days, which makes the relevance of the study limited. However, it is considered a suitable point of departure for risk assessment, in the absence of more accurate data.

The Cosmetic ingredient Review (CIR) Expert Panel (2017) concluded that Sodium Lauroyl Glutamate is safe for use in cosmetics in the present practices and concentrations.

As dermal absorption is dependent on the molecular properties, concentration, exposure time and vehicle simultaneously, in the absence of relevant experimental data it is difficult to assess an exact value. If not stated otherwise within the risk assessment, we assume 100% dermal absorption, however it must be noted that for the majority of compounds, even low molecular weight, lipophilic compounds, dermal absorption is expected to be significantly lower than 100%.

Overall, an undue risk of adverse effects is not expected when included at typical levels in cosmetic products.

References:
CIR, 2017. Safety assessment of Amino Acid Alkyl Amides as Used in Cosmetics. International Journal of Toxicology 36(suppl 1):17S-56S

ECHA registration dossier of Sodium hydrogen N-(1-oxododecyl)-L-glutamate, CAS 29923-31-7

Margin(s) of Safety

Point of Departure - Animal Study:	1200.0000mg/kg	**Exposure from Product**	0.00482900mg/kg	**Margin of Safety**	248498.654

ANNEX II - INGREDIENT DATA

Sodium Lauroyl Glutamate

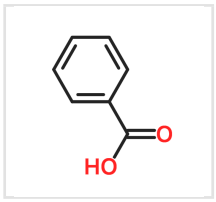
Acute Toxicity		LD50 > 2000 mg/kg
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Rat	Oral, Gavage	
Eye Irritation		Irritating to eyes HET-CAM test performed on chicken eggs and assessing cell viability.
Hens Egg Test on the Chorio-Allantoic Membrane (HET-CAM) [Other]		
Chicken	In vitro exposure	
Repeated Dose		112-day study. NOAEL = 1200 mg/kg/day 0, 1200 mg/kg/day (limit test). No mortality or clinical signs were observed during treatment. [Read across from N-cocoacyl glutaminic acid, sodium salts (CAS 68187 -30 -4)]
Repeat Dose Oral Toxicity Study [Other]		
Rat	Oral, Gavage	
Skin Irritation		Slightly irritating at 1%
Patch Test, 24hr [Other]		
Human	Dermal	
Skin Irritation		Not irritating The mean scores for erythema and oedema 0.7 and 0. All effects were reversible after 7 days. Consequently the test substance is not considered to be skin irritating. [Read across from l-Glutamic acid, N-coco acyl derivs., monosodium salts (CAS No. 68187-32-6)]
Draize Test [OECD 404]		
Rabbit	Dermal	
Skin Sensitisation		Non-sensitizer 100% for induction; 50% for challenge; 25% and 50% for rechallenge [Read across from l-Glutamic acid, N-coco acyl derivs., monosodium salts(CAS No. 68187-32-6)]
Buehler [OECD 406]		
Guinea Pig	Dermal	

ANNEX II - INGREDIENT DATA

Substance: Benzoic Acid
CAS: 65-85-0
Function: Preservative; Masking; Bulking

Concentration in Product: 0.017%
Dermal Exposure Level: 0.000008981 mg/cm^2
Daily Body Burden: 0.00248767mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	white crystalline powder
Boiling Point	249.2°C
Flammability	Auto-Ignition Temperature: 574°C
Flash Point	121 °C
Log Kow	1.88

Molecular Mass	122.13
Melting Point	122 °C
pH	2.5 - 3.5 at 20 °C
Specific Gravity	1.320

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Benzoic acid is a traditional preservative permitted at up to 2.5% in rinse-off products, 1.7% in oral products and 0.5% in leave-on formulations in Europe (SCCS 2005). Not a supported biocide in the BPD - Phase out for other product types by 25/10/2009. Maximum permitted concentration in Japan and Taiwan is 0.2%.

Benzoic acid has low acute oral toxicity with an LD50 value of 2250 mg/kg bw in mice and an LD50 > 2000 in rabbits (ECHA 1974-1979).
It is irritating to skin and eyes, where at undiluted concentrations it is corrosive to eyes (ECHA 1988).

Benzoic acid is classed as a non-sensitising substance, however, experimental results show that it can cause nonimmunological contact urticaria; this can happen without any previous exposure to the compound. The severity of the urticaria reaction is concentration dependent: at undiluted concentrations it may cause erythema whereas at diluted concentrations it may cause pruritus (CIR 2001).

Reproductive toxicity is seen at high doses; a NOAEL from a reproductive toxicity study was chosen as a point of departure (NOAEL = 500 mg/kg bw/day) because it is a conservative value (smaller NOAEL) and due to the duration of the study (16 weeks) which was closest to the recommended study length by the Scientific Committee on Consumer Safety (SCCS) Note of Guidance - 12 weeks/90days (SCCP 2005).

For the purposes of a safety assessment, 100% skin absorption rate should be assumed due to the absence of absorption, distribution, metabolism, and excretion (ADME) studies.

According to the Cosmetic Ingredient Review (CIR) Panel of Experts (Johnson et al 2017), benzoic acid has been reported in concentrations up to 5% in both rinse-off and leave-on formulations. The Panel further states that benzoic acid's safe concentration limit is 5%.

The chemical is unlikely to cause adverse effects when used in the recommended concentrations by the SCCS and other guidelines.

References:

CIR (2001). Final report on the safety assessment of benzyl alcohol, benzoic acid, and sodium benzoate. International Journal of Toxicology, 20(Suppl. 3): 23-50.

ECHA Registration Dossier of Benzoic acid (CAS no. 65-85-0). Available from: https://echa.europa.eu/registration-dossier/-/registered-dossier/13124/7/1 [Last accessed 20/02/2019].

Johnson, W.J., et al (2017). Safety assessment of benzyl alcohol, benzoic acid and its salts, and benzyl benzoate. International Journal of Toxicology, 36(Suppl.3): 5S-30S.

SCCP, 2005. Opinion on benzoic acid and sodium benzoate.

Margin(s) of Safety

Maximum Recommended Exposure	0.5000%	**Exposure from Product**	0.01700000%	**Margin of Exposure**	29.41
Point of Departure - Animal Study:	500.0000mg/kg	**Exposure from Product**	0.00248767mg/kg	**Margin of Safety**	200991.558

ANNEX II - INGREDIENT DATA

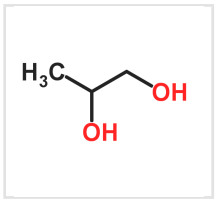
Benzoic Acid

Acute Toxicity		Range finding, 1 to 5% (500 to 7500 mg/kg) LD50 = 2250 mg/kg
Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		
Mouse	Oral, NOS	
Acute Toxicity		4 rabbits. LD50 > 2000 mg/kg
Acute Dermal Toxicity, Lethality [OECD 402]		
Rabbit	Dermal	
Eye Irritation		3 animals 77mg in one eye. Observation period: 21 days. Conclusion:Corrosive
In vivo Eye Irritation [Other]		
Rabbit	Instillation	
Genotoxicity		Non mutagenic for Mouse lymphoma L5178Y cells
Mammalian cell micronucleus test [OECD 487]		
In-vitro culture	In vitro exposure	
Repeated Dose		Dose administered in the diet for 18 to 24 months. Doses: 1%, 2%; Test group: 50 males and 52 females per dose Control group: 25 males and 43 females. NOAEL = 2% (approx 1000 mg/kg/day)
Repeat Dose Oral Toxicity Study [Other]		
Rat	Oral, Feed	
Reproductive Toxicity		Dose: 0.5%, 1% 4 generation study (third generation treated for 16 weeks, fourth treated until breeding). No adverse effects. NOAEL = 1% (appro 500 mg/kg/day)
In vivo reproductive toxicity study [Other]		
Rat	Oral, NOS	
Skin Irritation		10 adult females guinea pigs, rats and mice. Dose: Guinea pigs 50µl. Rats: 20µl. Mice: 5µl. Concentration: 20% Exposure: 3h. Conclusion: Irritating
In vivo skin irritation [Other]		
Guinea Pig	Dermal	
Skin Sensitisation		5%, 10%, 20% SI = 0.8, 0.9 and 0.8 respectively. Conclusion: not sensitising
Local Lymph Node Assay [OECD 429, OECD 442A, OECD 442B]		
Mouse	Dermal	
Skin Sensitisation		Benzoic Acid at 2% and 5% in Petrolatum did not induce sensitisation in two maximisation tests.
Maximisation Test [Other]		
Human	Dermal	
Skin Sensitisation		25 human volunteers were given five 48 h patch tests (over a 10 d period) with 2 % benzoic acid in petrolatum. None gave positive reactions when challenged 10-14 d after the induction phase with a final 48 h closed patch test with 2 % benzoic acid in petrolatum.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	
Skin Sensitisation		366 patients positive for contact urticaria; 124 patients positive for hypersensitivity test; TOT patients: 1252.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	
Skin Sensitisation		Erythema at application sites of patients (urticaria) at 5%.
Repeat Insult Patch Test (RIPT) [Other]		
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Propylene Glycol	**Concentration in Product:**	0.015%	
CAS:	57-55-6; 4254-14-2	**Dermal Exposure Level:**	0.000007924	mg/cm^2
Function:	Humectant; Skin Conditioning; Solvent; Viscosity Controlling	**Daily Body Burden:**	0.00109750mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Melting Point	-60°C	Molecular Mass	76.0942
Boiling Point	187.6°C	Density	0.785 g/ ml
Log Kow	0.92	Appearance	Colourless liquid
Water Solubility	1000000 mg/L	Boiling Point	189C
Vapour Pressure	0..129 mm Hg at 25 °C		

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Propylene Glycol is a widely used solvent in consumer products such as Cosmetics and foodstuffs. As a food additive it is referred to as E1520.

Mild irritant to the human skin at 25% in the patch test. Negative in eye irritation Draize test. Found to be non-sensitising in a local lymph node assay and showed low potential for sensitisation in a Human Repeat Insult Patch Tests (HRIPT) study. Propylene Glycol has low oral and dermal acute toxicity with high oral and dermal LD50 of greater than 18350 mg/kg bw and 2000 mg/kg bw, respectively. Non-mutagenic in in vitro and in-vivo genetic toxicity studies.

Propylene Glycol did not show carcinogenic activity in rats up to 50000 ppm in diet per day.

A no-observed-adverse-effect-level (NOAEL) of 2500 mg/kg bw/day is selected from a 2 year rat carcinogenicity study as the point of departure. A human acceptable daily intake (ADI) of 25 mg/kg bw has also been established by Joint FAO/WHO Expert Committee on Food Additives (JECFA, 2002).

Dermal absorption of propylene glycol is highly variable. In the earliest study radiolabelled propylene glycol did not penetrate the human skin biopsy sample after 1 hour (McGee et al. 1945). In more recent in-vitro studies, the relative dermal absorption of the applied dose was estimated to be 23% (0.96%/h) for monopropylene glycol (Fasano 2011) after indefinite, 24-hour application to human abdominal skin under occlusion. In another, similar study 0.65% (+- 0.35 S.D.) of monopropylene glycol was in the receptor fluid after 24 hours (Trottet 2004). In the same paper it was demonstrated that the skin penetration of PG is largely dependant on the formulation it is found in, and on the amount of product applied to the skin. Two formulations were tested – a gel and a cream, where PG was present at 12, 15 or 40%. The formulations were applied at 10 or 40 mg/cm2 for 24 hrs under occlusion. The skin penetration varied between 29.9% (+/-8.5 S.D.) to 45.4% (+/-5.4 S.D.) - the penetration rates were dependent on the formulation and on the amount applied (there was a positive relationship between the latter and the level of absorption), but it was not dependent on the % inclusion of PG in the formulation. Dermal absorption of 50% is conservatively taken for margin of safety calculations.

Propylene glycol was shown to be a penetration enhancer for other substances, in particular for hydrophilic compounds (Carrer et al. 2019). This property of propylene glycol is possibly due to its ability to disorder the lipidic order of the bilayer in dermis and epidermis (Carrer et al. 2019).

The Cosmetic Ingredient Review (CIR) Expert Panel reported Propylene Glycol was used at 0.0008-99% in 9747 products (with up to 73% in leave-on products) as of 2009, and concluded that it is safe as cosmetic ingredient in the present practices of use and concentration when formulated to be nonirritating (CIR 2012).

Overall the use of this material at typical levels would not be expected to pose an undue risk of significant adverse effects.

References

JECFA, (2002). Evaluation of Certain Food Additives. TRS 913-JECFA 59/112

https://echa.europa.eu/substance-information/-/substanceinfo/100.000.307

MacKee GM, Sulzeberger MB, Herrmann F, Baer RL. (1945). Histologic studies on percutaneous penetration with special reference to the effect of vehicles. J Ingest Dermatol, 6, 43–61 [cited in NTP NCRHR, 2004].

Fasano, W. J., Wil, F., Banton, M. I., Heneweer, M., & Moore, N. P. (2011). Dermal penetration of propylene glycols: Measured absorption across human abdominal skin in vitro and comparison with a QSAR model. Toxicology in Vitro, 25(8), 1664-1670.

Trottet, L., Merly, C., Mirza, M., Hadgraft, J., & Davis, A. F. (2004). Effect of finite doses of propylene glycol on enhancement of in vitro percutaneous permeation of loperamide hydrochloride. International journal of pharmaceutics, 274(1-2), 213-219.

Carrer, V., Alonso, C., Pont, M., Zanuy, M., Córdoba, M., Espinosa, S., ... & Coderch, L. (2019). Effect of propylene glycol on the skin penetration of drugs. Archives of Dermatological Research, 1-16.

CIR (2012). Safety Assessment of Propylene Glycol, Tripropylene Glycol, and PPGs as Used in Cosmetics. International Journal of Toxicology 31(Supplement 2) 245S-260S.

Margin(s) of Safety

Point of Departure - Animal Study:	2500.0000mg/kg	**Exposure from Product**	0.00109750mg/kg	**Margin of Safety**	2277904.33
Point of Departure - Human Data:	25.0000mg/kg	**Exposure from Product**	0.00109750mg/kg	**Margin of Safety**	22779.0433

ANNEX II - INGREDIENT DATA

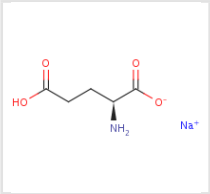
Propylene Glycol

Acute Toxicity Acute Toxicity, Lethality [Other]		LD50: 22000 mg/kg bw /day [1st experiment (serie A): 15, 17.5, 20, 22.5 and 25 ml/kg bw; 2nd experiment (serie B): 17.6, 18,6, 20.0, 21.4 and 22.6 ml/kg bw]
Rat	Oral, Gavage	
Acute Toxicity Acute Toxicity, Lethality [Other]		LD50: >2000 mg/kg bw [Dose: 2000 mg/kg bw]
Rabbit	Dermal	
ADME In vitro skin absorption [OECD 428]		dermal absorption of monopropylene glycol was 23% (0.96%/h) after 24 hours [indefinite dose of monopropylene glycol applied under occlusion]
Human	Dermal	
ADME In vitro skin absorption [OECD 428]		After 24 hours, percentage of propylene glycol (PG) in the receptor fluid was: -in the PG in water as 50/50 solution (occluded, infinite conditions) condition 0.65% (+/- 0.35 S.D.) -in the 12%, 15% or 40% PG in gel or cream formulation (occluded, 10mg/cm2 or 40mg/cm2 applied) from 29.9% (+/- 8.5 S.D.) to 45.5% (+/- 5.4 S.D.)
Human	Dermal	
Carcinogenicity Carcinogenicity studies [Other]		NOAEL: 2500 mg/kg bw /day Dose: 0, 6250, 12500, 25000 and 50000 ppm in diet Duration: 2 years; No. of animal: 30/sex/dose
Rat	Oral, Feed	
Eye Irritation Draize, Standard [OECD 405]		cornea opacity score 0/4; iris score 0.1/2; conjunctivae score 0.4/3; chemosis score 0/4
Rabbit	Instillation	
Genotoxicity Bacterial reverse mutation test (Ames) [OECD 471]		Negative Ames Test +/- S9 activation
Bacteria	In vitro exposure	
Genotoxicity Mammalian chromosome aberration test [OECD 473]		Negative chromosomal aberration (human lymphocytes) +/- S9 activation
In-vitro culture	In vitro exposure	
Genotoxicity Mammalian erythrocyte micronucleus test [OECD 474]		Propylene glycol produced no detectable increase in micronucleated polychromatic erythrocytes when administered by ip injection to mice at doses up to 15000 mg/kg.
Mouse	Intraperitoneal	
Repeated Dose Repeat Dose Oral Toxicity Study [Other]		NOAEL: 50000 ppm (1700 mg/kg bw/day for male; 2 100 mg/kg bw/day for female) [Dose: 0, 6250, 12500, 25000 and 50000 ppm in diet, Exposure: 2 years; No. of animal: 30/sex/dose]
Rat	Oral, Feed	
Repeated Dose Repeat Dose Inhalation Toxicity Study [Other]		NOAEC: 1 000 mg/m³ air for female; 2 200 mg/m³ air for male [Dose: 2 200 mg/m³ air / 0, 0.16 ± 0.04, 1.01 ± 0.11 and 2.18 ± 0.31 mg/l, Exposure: 90 days, 6 hours/day, 5 days/week, 19/sex/dose]
Rat	Inhalation	
Reproductive Toxicity NTP Reproductive Assessment by Continuous Breeding (RACB)		NOAEL for toxicity/ fertility/ developmental effects: 10100 mg/kg bw/day [Dose: 0, 1.82, 4.80 and 10.10 g/kg bw/day, two generation study, No of animal: Main study: 20/sex/dose in each treatment group; 40/sex/dose in the control group; Second generation animals: 20/sex/dose]
Mouse	Oral, Water	
Reproductive Toxicity Prenatal Development Toxicity Study [OECD 414]		NOAEL (maternal animals): 520 mg/kg bw/day NOAEL (fetuses): 1040 mg/kg bw/day [Dose: 0.5, 5 & 10 ml/kgb w/day, Exposure: On gestation days 6 through 15, No .of animal: 30 females/dose]
Mouse	Oral, Gavage	
Skin Irritation Patch Test, 24hr [Other]		0.2 ml 25% propylene glycol applied to 30 female and 3 male subjects. The tested substance exhibited mild irritation compared to that of the positive control.
Human	Dermal	
Skin Sensitisation Local Lymph Node Assay [OECD 429, OECD 442A, OECD 442B]		Non-sensitiser Dose: 50% and 100% Result: For 50% solution, 1.2; For 100% test substance, 1.6
Mouse	Dermal	
Skin Sensitisation Repeat Insult Patch Test (RIPT) [Other]		Approximately 0.2 ml of the test material was applied to 113 volunteers (as a neat substance for subjects 1-47 only, and as a 50% aqueous solution for the rest of the panel). One subject was observed to be hypersensitive in an irritant manner, throughout the induction and challenge phases of the study.
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Sodium Glutamate	**Concentration in Product:**	0.0045%	
CAS:	32221-81-1; 16177-21-2; 6106-04-3; 142-47-2	**Dermal Exposure Level:**	0.000002377	mg/cm^2
Function:	Fragrance; Hair Conditioning; Skin Conditioning	**Daily Body Burden:**	0.00065850mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	White crystalline powder
Molecular Mass	169.111 g/mol
Melting Point	232 °C, 505 K, 450 °F
Water Solubility	74g/100mL

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Sodium Glutamate also known as Monosodium Glutamate (MSG) is the sodium salt of Glutamic Acid. It is found naturally in foods such as tomatoes and cheese. It is also used in cosmetics for hair conditioning, skin conditioning and as a fragrance ingredient.

Studies on rats have found high LD50 values which mean it is unlikely to be acutely toxic. It was not found to be an eye irritant, skin irritant or skin sensitiser. It was not found to be genotoxic in both in vitro or in vivo studies and was not found to be carcinogenic.

A repeated dose study carried out on rats found a NOAEL of 5100 mg/kg bw/day and a NOAEL of 4800 mg/kg bw/day for male and female rats respectively. These were the highest dose tested for both sexes with no adverse effects noted. The lower NOAEL of 4800 mg/kg bw/day has been used for the Point of Departure with a safety factor of 3 applied to extrapolate to a longer study.

As dermal absorption is dependent on the molecular properties, concentration, exposure time and vehicle simultaneously, in the absence of relevant experimental data it is difficult to assess an exact value. If not stated otherwise within the risk assessment, we assume 100% dermal absorption, however it must be noted that for the majority of compounds, even low molecular weight, lipophilic compounds, dermal absorption is expected to be significantly lower than 100%.

The Cosmetic Ingredient Review (CIR) concluded Sodium Glutamate is safe for use in leave-on cosmetics at a maximum concentration of 2% and rinse-off cosmetics at a maximum concentration of 0.01% (CIR, 2013).

On the basis of the available information and history of use, it would not be expected to pose an undue risk of significant adverse effects.

References:

CIR (2013), Safety Assessment of a-Amino Acids as Used in Cosmetics - https://online.personalcarecouncil.org/ctfa-static/online/lists/cir-pdfs/PR607.pdf (Accessed: 28/09/2020)

Margin(s) of Safety

Point of Departure - Animal Study:	1600.0000mg/kg	**Exposure from Product**	0.00065850mg/kg	**Margin of Safety**	2429764.62

ANNEX II - INGREDIENT DATA

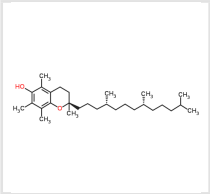
Sodium Glutamate

Acute Toxicity		LD50 (male rats): 17.3 g/kg bw LD50 (female rats): 15.8 g/kg bw
Acute Toxicity, Lethality [Other]		
Rat	Oral, Gavage	
Carcinogenicity		Dose: 0, 0.6, 1.25, 2.5 and 5.0% NOAEL: >=5% Not carcinogenic
Carcinogenicity studies [OECD 451]		
Rat	Oral, Feed	
Eye Irritation		70 mg applied Not irritating
In vivo Eye Irritation [Other]		
Rabbit	Instillation	
Genotoxicity		Negative with and without metabolic activation
Bacterial reverse mutation test (Ames) [OECD 471]		
Bacteria	In vitro exposure	
Genotoxicity		Negative
Mammalian erythrocyte micronucleus test [OECD 474]		
Mouse	Oral, Gavage	
Repeated Dose		29 day study NOAEL (male rats): 5100 mg/kg bw/day (highest dose) NOAEL (female rats): 4800 mg/kg bw/day (highest dose) No adverse effects observed
Repeat Dose Oral Toxicity Study [Other]		
Rat	Oral, Feed	
Reproductive Toxicity		Dose: 0.5, 1.5, 5% (w/w/) NOAEL (parental): 1.5% based on absolute and relative kidney weight increase NOAEL (offspring) 1.5% based on reduced absolute and relative spleen weight
Two-Generation Reproduction Toxicity [OECD 416]		
Rat	Oral, Feed	
Reproductive Toxicity		Dose: 0.5, 1.5, 5% (w/w) NOAEC: >=5% No adverse effects
Prenatal Development Toxicity Study [OECD 414]		
Rat	Oral, Feed	
Skin Irritation		Semiocclusive coverage 0.5 g applied for 4 hours Not irritating
In vivo skin irritation [Other]		
Rabbit	Dermal	
Skin Sensitisation		Induction and challenge: 80% w/v in distilled water Not sensitising
Maximisation Test [Other]		
Guinea Pig	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Tocopherol	**Concentration in Product:**	0.00036%	
CAS:	1406-18-4; 10191-41-0; 1406-66-2; 2074-53-5; 59-02-9; 148-03-8; 119-13-1; 54-28-4	**Dermal Exposure Level:**	0.000000190	mg/cm^2
Function:	Skin Conditioning; Antioxidant; Masking	**Daily Body Burden:**	0.00002634mg/kg	

Chemical Structure



Physical/Chemical Characteristics

Appearance	Oily Viscous light yellow liquid	Melting Point	3°C
Boiling Point	200 - 220 °C at 0.1 hPa	Odour	None
Flammability	Auto-Ignition Temperature: 340°C	pH	n.a.
Flash Point	240°C	Specific Gravity	0.95
Molecular Mass	430.69		

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Vitamin E is an essential nutrient, also used as an antioxidant in many consumer products (in food, authorised within the EU under E306 to E309, and generally recognized as safe (GRAS) in the USA (21CFR184.1890).

It is generally not shown as irritant in animal tests, as described in the European Chemical Agency (ECHA) registration dossiers of tocopherols and/or alpha-tocopherol.

The Cosmetic Ingredients Review (CIR) Expert Panel commented that although moderate sensitisation potential was reported in a Guinea pig maximization test of dl-α-tocopherol, dermal reactions to tocopherol in humans are rare. In clinical patch tests the incidence of positive reactions to α-tocopherol in petrolatum was 0.66% in 1814 patients, and undiluted dl-α-tocopherol was 0.7% in 4454 patients. Some case reports of contact dermatitis to tocopherol containing products have been described (CIR, 2018). However, the North American Contact Dermatitis Group deleted this ingredient from its standard testing panel because of the extremely low incidence of reactions. As a precaution, the EC3 value of 7.4 derived from the Local Lymph Node Assay can be used to calculate a point of departure (NESIL) for the sensitisation endpoint. Using Basketter's equation (2005) a NESIL of 1395.005 ug/cm2 was derived from the EC3 value.

Dietary References Values for vitamin E range between 5 mg/day and 11 mg /day (EFSA, 2015), and despite the European Food Safety Authority's (EFSA) Panel on Food Additives and Nutrient Sources Added to Food (ANS) concluded that no acceptable daily intake (ADI) could be established, as limited data were available regarding reproductive and developmental toxicology. However, it concluded that tocopherols are not of safety concern at the levels used in food. On the contrary, the Joint FAO/WHO Expert Committee on Food Additives (JECFA,1986) derived an ADI of 0.15-2 mg/kg/day for dl-alpha-tocopherol,

Furthermore a NOAEL of 125 mg/kg/day based on a 90 day repeated dose toxicity study was identified which can be used complimentary to the human ADI as point of departure.

Several dermal absorption studies indicate that the absorption of Tocopherol is variable depending on the formulations used and most of it stays on the skin (accumulates in cell membranes but also in the extracellular lipid matrix of the stratum corneum) and topical application of Tocopherol increases its levels in epidermis and dermis by several folds, where vitamin E contributes to antioxidant defences. However, much of a topically applied dose of vitamin E alone will be destroyed in the skin following exposure to UV light (Oregon state university). Because of the variability in the dermal absorption studies 50% is assumed as a default value based on the SCCS opinion.

Tocopherol was tested to have photoprotective effects: 5 mg/cm2 Tocopherol was applied to the back of female hairless mice for 24 hours prior to UV. The results indicated the protection of cutaneous tissue against oxidative damage. In other study, 5% Tocopherol was topically applied to female hairless mice for 1 week prior to UV exposure (24 weeks) and until study termination. No toxic effects were found and Tocopherol protected against blistering, pigmentation and tumours compared to untreated mice. Time to tumour developmental was significantly delayed with Tocopherol. In the human study, A formulation containing 10% Tocopherols and other cosmetic ingredients was applied to a 2 cm2 area of skin in 30 participant. Test sites were evaluated immediately and 6 and 24 hours after UVB exposure. Phototoxic reactions were statistically significantly decreased at the test site than at the untreated site (Animal studies: Lopez-Torres 1998, Burke 2000; Human study: Pedrelli VF 2012; all cited in CIR 2018 report).

In its 2018 review, the CIR reported 6635 products containing tocopherol, at up to 5.4% in leave-on products and up to 3% in rinse-off. It concluded that it is safe in the current practices of use and concentration in cosmetic products. The Scientific Committee on Cosmetic Products and Non-Food Products (SCCNFP) had the same conclusion in its 2001 evaluation report on alpha-tocopherol acetate, a close structural analogue.

Overall, tocopherol is not expected to trigger any adverse effects in the majority of users.

References

CIR, 2018. Safety Assessment of Tocopherols and Tocotrienols as Used in Cosmetics. IJT, 37(S2), 61S-94S.

EFSA, 2015. Scientific Opinion on the re-evaluation of tocopherol-rich extract (E 306), α-tocopherol (E 307), γ-tocopherol (E 308) and δ-tocopherol (E 309) as food additives EFSA Journal 13(9):4247

GRAS Listing, [[alpha]-Tocopherols]. FDA, 21 CFR. §184.1890 (Last accessed 21/03/2019).

SCCNFP, 2001. Opinion of the SCCNFP concerning the use of alpha-tocopherol acetate in cosmetic products. SCCNFP/0494/01

JECFA, 1986. Evaluations of the Joint FAO/WHO Expert Committee on Food Additives (JECFA). TOCOPHEROL CONCENTRATE, MIXED

Oregan state university, Micro nutrient information centre. Vitamin E and Skin Health.

SCCS notes of guidance 9th revision SCCS/1564/15

Basketter DA, Clapp C, Jeffries D, Safford B, Ryan CA, Gerbrick F, Dearman RJ, Kimber I. Predictive identification of human skin sensitisation thresholds. Contact Dermatitis. 2005: 53(5); 260-7.

[SCCS] Bernauer, U., Bodin, L., Chaudry, Q., Coenraads, P. J., Dusinska, M., Ezendam, J., ... & Rogiers, V. (2019). Opinion on skin sensitisation Quantitative Risk Assessment for fragrance ingredients (QRA2)-Submission I SCCS/1589/17–Final Opinion (Publications Office of the European Union, Luxembourg, Luxembourg (90 pages)(2019)-ISSN: 1831-4767-ISBN: 978-92-76-00241-3.

Margin(s) of Safety

Point of Departure - Animal Study:	125.0000mg/kg	**Exposure from Product**	0.00002634mg/kg	**Margin of Safety**	4745634.02
Point of Departure - Human Data:	2.0000mg/kg	**Exposure from Product**	0.00002634mg/kg	**Margin of Safety**	75930.1443
Maximum Recommended Exposure	1.3950mg/cm	**Exposure from Product**	0.00000019mg/cm	**Margin of Safety**	7335136.67

ANNEX II - INGREDIENT DATA

Tocopherol

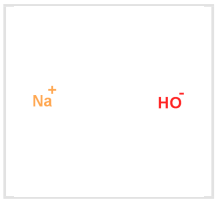
Acute Toxicity Acute Oral Toxicity, Lethality [OECD 401, OECD 423, OECD 425]		[dl-alpha-tocopherol] LD50 > 2000 mg/kg 5 animals/sex
Rat	Oral, Gavage	
Acute Toxicity Acute Dermal Toxicity, Lethality [OECD 402]		LD50 >2000mg/kg bw
Rabbit	Dermal	
ADME In vivo metabolism study [Other]		The major route of excretion was the faeces. 18 Tocopherol-derived metabolites along with a-, g-, and d-tocopherol were identified in the faeces. Short-chain degradation metabolites, primarily g- and d-carboxyethyl hydroxychromans and carboxymethylbutyl hydroxychromans were detected in the urine, serum and liver samples.
Mouse	Oral, Feed	
ADME In vitro absorption study [Other]		The dermal penetration of 1% tocopherol was evaluated in several vehicles. The greatest permeation found in viable skin + the receptor was from an emulsion vehicle that contained 10% isopropyl myristate; 12.24% of the applied dose was found in the viable skin and receptor fluid.
Ex-vivo Tissue	Dermal	
ADME In vivo absorption study [Other]		Dermal application of 5 mg/cm2 α-tocopherol to the backs of female hairless SKH1 mice for 24 h resulted in a 62-fold increase of α-tocopherol in the epidermis and a 22-fold increase in the dermis.
Mouse	Dermal	
Carcinogenicity Carcinogenicity studies [Other]		Not carcinogenic at up to 2000 mg/kg/day (but no NOAEL established for other toxicological endpoints) 500, 1000, 2000 mg/kg/day 104 weeks study. 60/Sex/dose
Rat	Oral, Feed	
Eye Irritation Draize, Standard [OECD 405]		Not irritating. 9 animals. Primary irritation score = 0
Rabbit	Instillation	
Genotoxicity Mammalian cell gene mutation test [OECD 476]		Not mutagenic Without metabolic activation (not tested with).
Hamster	In vitro exposure	
Genotoxicity Bacterial reverse mutation test (Ames) [OECD 471]		Not mutagenic TA 97, TA 98, TA 100, TA 102 and TA 1535, +/- S9 mix
Bacteria	In vitro exposure	
Repeated Dose 90-Day Oral Toxicity Study [OECD 408, OECD 409]		[d-alpha-tocopherol] NOAEL = 125 mg/kg/day 10/sex/dose; 0, 125, 500, 2000 mg/kg/day Main effects: Increased liver-to-body-weight ratio, increased thromboplastin time.
Rat	Oral, Gavage	
Reproductive Toxicity In vivo reproductive toxicity study [Other]		[alpha-Tocopherol] NOAEL = 7.5 mg/kg/day (reduced pregancy rate) 0.75, 7.5 and 75mg/day, 20 days prior to mating and during gestation. Animals killed on GD20.
Rat	Oral, Feed	
Reproductive Toxicity In vivo reproductive toxicity study [Other]		[d-alpha-tocopherol] LOAEL = 1000 mg/kg/day (only dose tested) 1000 mg/kg/day, 2 weeks before mating and until end of lactation. Offspring fed the same. Sacrifices at PDN0, 7 ,14, 21 and 60-90. No adverse effects on survival, weight, litter size. Reduction of long-term synaptic plasticity in juvenile hippocampus, deficit in long-lasting spatial memory.
Rat	Oral, Feed	
Reproductive Toxicity In vivo reproductive toxicity study [Other]		[dl-alpha-tocopheryl acetate] NOAEL > 2252 mg/kg/day Several experiments, with administration to dams during gestation only, or gestation + lactation, or to pups. No fetal abnormalities in any of the groups.
Rat	Oral, Feed	
Skin Irritation Draize Test [OECD 404]		Slightly Irritating. 3 animals, 4h exposure in semiocclusive conditions, no vehicle Primary Irritation Index = 1.2
Rabbit	Dermal	
Skin Sensitisation Maximisation Test [OECD 406]		Moderate sensitiser. 24hrs after patch removal and erythema score of 1 was reported for 3 animals. After 48hrs, the erythema scores were 1 for for 4 animals, and 2 for 3 animals
Guinea Pig	Dermal	
Skin Sensitisation Local Lymph Node Assay [OECD 429, OECD 442A, OECD 442B]		A volume of 25 uL tocopherol was applied to the dorsum of the ears of mice for 3 days. The minimum concentration required to elicit a sensitisation reaction (EC3) was 7.4
Mouse	Dermal	

ANNEX II - INGREDIENT DATA

Substance: Sodium Hydroxide
CAS: 1310-73-2
Function: Buffering; Denaturant

Concentration in Product: 0.00032%
Dermal Exposure Level: 0.000000169 mg/cm^2
Daily Body Burden: 0.00004683mg/kg

Chemical Structure



Physical/Chemical Characteristics

Appearance	Waxy white pellets
Boiling Point	Decomposition temperature: 1384°C
Molecular Mass	56.11
Melting Point	380°C
Odour	none
pH	13
Specific Gravity	2.044
Water Solubility	Soluble

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Sodium hydroxide is an inorganic compound consisting of sodium cations Na+ and hydroxide anions OH−. Sodium hydroxide is a strong base used to neutralise acids and to make sodium salts. It is used in cosmetics as a pH adjuster and as a denaturant. Sodium hydroxide has been affirmed by the US as generally recognised as safe (GRAS) as a direct human food ingredient (21CFR184.1763).

Where information is not available data on structural analogues has been used as a read-across substance.

Sodium hydroxide is a highly caustic base and alkali that decomposes proteins at ordinary ambient temperatures and may cause severe chemical burns. In patch tests, it was irritating to the skin of human subjects at a concentration of 0.5%. Severe irritation or corrosion was also observed at a concentration of 5% in human subjects. In an acute eye irritation/corrosion study, sodium hydroxide was irritating to the eyes of rabbits at a concentration of 0.5% and corrosive at 10%. It showed no sensitisation potential at a concentration of up to 1% in a human repeat insult patch test (HRIPT). The compound's structure does not contain conjugated double bonds, therefore, it will not absorb UV light which is a prerequisite for phototoxicity.

The acute toxicity of sodium hydroxide depends on the physical form (solid or solution), the concentration and dose. The acute oral LD50 value in rabbits was 325 mg/kg bw. No mortality was observed when rats were exposed to 0.75 mg/m sodium hydroxide aerosol for 2 h.

Sodium hydroxide and magnesium hydroxide are inorganic hydroxides are mostly used as most commonly as pH adjusters in cosmetics. The main safety concern is with the local toxicity however when used as buffering agents they are unlikely to cause adverse effects and cations are unlikely to cause systemic adverse effects at the level that are used in cosmetics (CIR, 2016).

A NOAEL of 1000 mg/kg bw was identified in a combined repeated dose and reproductive toxicity study in which rats received 10, 330, or 1000 mg/kg bw/day Mg (OH)2 for up to 45 days. No toxicological relevant changes or effects were seen in this study. Safety factor of three is applied to account for dosing of males for up to 29 days only. Resultantly, the point of departure is 333 mg/kg bw/day.

Based on data from the read-across substance Mg (OH)2 , sodium hydroxide can be considered as not toxic to the reproductive system. Negative results were obtained from the Ames test and the chromosomal aberration assays.
No specific data on dermal absorption is available therefore a dermal absorption of 100% is assumed.

The Cosmetic Ingredient Review Expert Panel (CIR) has assessed the safety of sodium hydroxide as used in cosmetics and concludes that it is safe in hair straighteners and depilatories under conditions of recommended use; users should minimise skin contact. The panel also concluded that it is safe for all other present practices of use and concentration when formulated to be non- irritating (CIR, 2016).

Overall, the available toxicological data indicates that at low levels and if sodium hydroxide is properly used according to the manufacturer instructions, the material would not be expected to pose an undue risk. Sodium hydroxide is normally used to neutralise a product so is rarely present as sodium hydroxide if all of the sodium hydroxide is consumed during the reaction. When used as a pH modifier, it will not add to the formulation's toxicological properties.

The CIR reported that sodium hydroxide is used at up to 10% in an “other” skin care preparation, which may or may not be a leave-on and 6.9% in a face or neck formulation in a leave -on formulation. The expert group noted that the concentration of sodium hydroxide in hair waving/straightening products should be limited and adequate instructions should be provided to users such as wearing of gloves or limitation of frequency of use. In addition, users should avoid prolonged skin exposures on hands and scalp. The panel stressed that if products containing sodium hydroxide are to be used on children, instructions on the proper application and use from the manufacturer should be carefully followed.

References:

CIR, (2016). Safety Assessment of Inorganic Hydroxides as Used in Cosmetics.

FDA, 2018. 21CFR184.1763. GRAS statement of sodium hydroxide. Available at: https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=184.1763 (Last accessed: 17/04/2019).

https://echa.europa.eu/substance-information/-/substanceinfo/100.013.792

Margin(s) of Safety

Point of Departure - Animal Study: 333.0000mg/kg
Exposure from Product 0.00004683mg/kg
Margin of Safety 7111332.57

ANNEX II - INGREDIENT DATA

Sodium Hydroxide

Acute Toxicity Acute Toxicity, Lethality [Other]		LD50: 325 mg/kg bw.
Rabbit	Oral, NOS	
Acute Toxicity Acute Toxicity, Lethality [Other]		No mortalities during tests. Whole body exposure of 24 rats to 0.75 mg/m NaOH aerosol for 2 h .
Rat	Inhalation	
Eye Irritation Draize, Standard [OECD 405]		slight eye irritant at 0.5%, corrosive at 10%. [3 groups of 3 rabbits for 0.5%; 4 groups of 3 rabbits for 10%. Eyes were not washed.]
Rabbit	Dermal	
Genotoxicity Mammalian chromosome aberration test [OECD 473]		No clastogenic activity was found. -test concentration up to 16 mM sodium hydroxide. -with and without metabolic activation.
Hamster	In vitro exposure	
Genotoxicity Bacterial reverse mutation test (Ames) [OECD 471]		Non-genotoxic. -Salmonella typhimurium strains TA1535, TA1537, TA1538, TA98, TA100 and in a DNA-repair test with Escherichia coli strains WP2, WP67 and CM871. -with and without metabolic activation.
Bacteria	In vitro exposure	
Genotoxicity Mammalian bone marrow chromosome aberration test [OECD 475]		No significant increase of nuclei were observed. -5/sex/dose. - a single intraperitoneal dose of 10mg/kg was administered.
Mouse	Intraperitoneal	
Repeated Dose Repeat Dose Oral Toxicity Study [Other]		Read-across from Mg(OH)2: NOAEL : 1000 mg/kg bw/day (No toxicological relevant changes seen.) [10/sex/dose received 0, 1, 10, 330, or 1000 mg/kg bw/day in water daily. Exposure for 29 days (Male), 41-45 days (Females).]
Rat	Oral, Gavage	
Reproductive Toxicity Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test		Read-across from Mg(OH)2: No toxicological relevant effects in parental animals and offspring. [10/sex/dose received 0, 1, 10, 330, or 1000 mg/kg bw/day in water daily. Exposure for 29 days (Male), 41-45 days (Females).]
Rat	Oral, Gavage	
Skin Irritation Patch Test, 48hr [Other]		-Irritation and corrosion observed at 2 to 5%. -No reactions at 1%. [up to 5% aqueous solution of NaOH was applied to the volar area of the forearm. patches removed after 48 h.]
Human	Dermal	
Skin Irritation In vivo skin irritation [Other]		Irritating to the skin. -0.5% of NaOH was applied to the skin of 30 subjects for an hour.
Human	Dermal	
Skin Sensitisation Repeat Insult Patch Test (RIPT) [Other]		15 human volunteers aged 20 to 25 were exposed to 1.0, 0.5, 0.25, 0.125 and 0.063% Sodium Hydroxide for 24 hours. The volunteers were challenged on day 7 with 0.125% Sodium Hydroxide. No evidence of allergenic reactions were identified.
Human	Dermal	

ANNEX II - INGREDIENT DATA

Substance:	Hydrogenated Palm Glycerides Citrate	**Concentration in Product:**	0.00018%	
CAS:	91744-68-2 ; 91052-16-3	**Dermal Exposure Level:**	0.000000095	mg/cm^2
Function:	Emollient; Skin conditioning	**Daily Body Burden:**	0.00002634mg/kg	

Chemical Structure

No Structure Available

Physical/Chemical Characteristics

Appearance: Brown Viscous Paste

Toxicological Summary

The below information is a summary of the toxicological profile for this raw material, including a description of general hazards associated with the material as well as discussion of the most critical studies relating to the overall safety in use of this substance/mixture in consumer products. Details of the available toxicological data can be found overleaf.

Overall Toxicity Review:

Glycerides of palm oil, mono-, di-, and tri- hydrogenated, citrates. Has useful antioxidant properties and used as an emollient & skin conditioning agent.

Limited toxicological data on the specific substance was available for review. However, similar materials find widespread use in Cosmetics (e.g. PEG-20 Hydrogenated palm glycerides, PEG-18 Palm Glycerides, ...) where according to the Cosmetic Ingredient Review (CIR) Panel of Experts, they pose no significant risk to the consumer (CIR, 2015).

Mono-and di-glycerides of fatty acids (E471) are also common food-additives. Currently, mono- and di-glycerides of fatty acids is authorised as a food additive in the EU at quantum satis (QS) in 77 food categories including dairy and fruit derived foodstuff such as jam and preserves.

The European Food Safety Authority (EFSA) did not set an acceptable daily intake (ADI) on the basis that there were no safety concerns at current levels of intake (EFSA, 2017). Exposure estimates to the food additive E 471 (mono- and di-glycerides of fatty acids) ranged from 10 to 26 mg/kg bw/day, at the mean, and from 21 to 58 mg/kg bw per day for the 95th percentile in the adult population group.

Moreover, Glycerides of palm oil are expected to be hydrolysed to glyceryl residues and citric acid, which are widespread components or metabolic products in the body, thus unlikely to cause adverse effects at typical cosmetic levels.

A no-observed-adverse-effect-level (NOAEL) was not available for review however based on the history of safe use of similar ingredients in a variety of products it would be unlikely to produce significant adverse effects in the majority of consumers when incorporated at typical levels within a Consumer Product.

References

CIR, 2015. Safety Assessment of PEGylated Alkyl Glycerides as Used in Cosmetics

EFSA (2017). Re-evaluation of mono- and di-glycerides of fatty acids(E 471) as food additives.

Margin(s) of Safety

Point of Departure - Human Data:	10.0000mg/kg	**Exposure from Product**	0.00002634mg/kg	**Margin of Safety**	379650.721

ANNEX II - INGREDIENT DATA

Hydrogenated Palm Glycerides Citrate

Details on specific toxicological studies related to endpoints of concern are not available for Hydrogenated Palm Glycerides Citrate, please see the previous page for a justification of safety based on history of use &/or weight of evidence.

ANNEX III - ALLERGENS

Allergen Name	% in Product
d-Limonene (5989-27-5 ; 7705-14-8)	0.022896
Linalool (78-70-6)	0.021308
1,2,3,5,6,7,8,8-octahydro-2,3,8,8-tetramethyl-2-	0.020000
Anisaldehyde (123-11-5)	0.020000
4-tert-butylcyclohexyl Acetate (32210-23-4)	0.020000
Heliotropine (120-57-0)	0.020000
Phenyl ethyl alcohol (60-12-8)	0.020000
Benzyl Acetate	0.020000
Undecan-4-olide	0.020000
2-(Isobutyl)-4-hydroxy-4-methyl tetrahydropyran	0.020000
2,6-dimethyloct-7-en-2-ol	0.020000
Hexyl Cinnamal (101-86-0)	0.013600
Cyclamen Aldehyde (103-95-7)	0.004000
Allyl cyclohexylpropionate (2705-87-5)	0.004000
Dodecanal (112-54-9)	0.004000
7-methyl-3-methyleneocta-1,6-diene (123-35-3)	0.004000
Isohexenyl tetrahydro benzaldehyde	0.004000
2,6-Dimethyl-5-heptenal	0.004000
Diphenyl ether	0.004000
Ethy Acetate (141-78-6)	0.004000
Coumarin	0.003600
Citral	0.000036

ANNEX IV - ADDITIONAL REASONABLY FORESEEABLE EXPOSURES

ANNEX V - RAW MATERIAL SPECIFICATIONS

Substance: Aqua
CAS: 7732-18-5

Specification

There are no minimum legal purity specifications for water used in the manufacture of cosmetics.

It should ensure that the grade of water used in the manufacture of this product is of a suitably safe specification, following criteria such as those of laid out in GMP standards like ISO 22716.

Substance: Sodium Laureth Sulfate
CAS: 68585-34-2; 3088-31-1; 9004-82-4; 68891-38-3; 1335-72-4; 91648-56-5

Specification

Sodium Laureth Sulfate does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

According to United States Pharmacopeia's Food Chemical Codex, lead and selenium impurities are acceptable at not more than (NMT) 2 mg/kg (lead) and NMT 0.003% (selenium) in Sodium Sulfate used in food.

≤ 3% Sodium Chloride
≤ 2% Sodium Sulfate
≤ 3% Unsulfated Alcohol

≤ 10ppm Ethylene Oxide

≤ 10ppm 1,4-dioxane

NMT 2 mg.kg Lead when used in food
0.003% Selenium when used in food

≤ 10ppm Heavy Metals (sum of)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Sodium Chloride
CAS: 7647-14-5

Specification

Sodium Chloride does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≤ 10ppm Heavy metals (total sum)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens.

Substance: Cocamidopropyl Betaine
CAS: 86438-79-1; 61789-40-0; 86243-76-7; 70851-07-9

Specification

Cocamidopropyl Betaine does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

Free from Nitrosamines

≤ 3% Amidoamine
≤ 0.02% DMAPA

≤ 10ppm Heavy metals (sum of)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Coco-Glucoside
CAS: 58846-77-8; 110615-47-9; 68515-73-1; 141464-42-8; 54549-25-6

Specification

Coco-Glucoside does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≤ 500 ppm Magnesium Oxide
≤ 1% free fatty acid/alcohol
≤ 3% Ash and Sulphated Ash

≤ 10ppm Heavy metals (total sum)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Glyceryl Oleate
CAS: 68424-61-3; 25496-72-4; 67701-32-0; 111-03-5

Specification

Glyceryl Oleate does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≥ 90% monoester content
≤ 2.5% free fatty acid/alcohol
≤ 1% Glycerol

≤ 10ppm Heavy metals (total sum)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: PEG-3 Distearate
CAS: 9005-08-7; 91031-45-7

Specification

PEG-3 Distearate does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

< 3% Stearic acid

≤ 10ppm Ethylene Oxide

≤ 10ppm 1,4-dioxane

≤ 10ppm Heavy Metals (sum of)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Perfume - CARING EFF308818 - European Flavours & Fragrances PLC
CAS: Mixture

Specification

Maximum levels of declared allergens (identified as such by either the EU Cosmetic Regulation or the EU CLP Regulation) as outlined in Annex I as part of the fragrance safety assessment.

< 0.1% additional substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1000 cfu/g, absence of specific pathogens

Substance: Citric Acid
CAS: 77-92-9; 5949-29-1

Specification

Citric Acid does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≤ 10ppm Heavy Metals (total sum)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Sodium Benzoate
CAS: 532-32-1

Specification

Sodium Benzoate has minimum purity specifications set within the Food additives Commission Regulation (EU) No 231/2012 but not within the Cosmetic Regulation (EU) 1223/2009. Manufacturer should ensure a minimum purity of:

Minimum 99% Pure

≤ 0.06% Chlorinated organic compounds (corresponding to 0.25 % expressed as monochlorobenzoic acid)

≤ 3mg/kg Arsenic
≤ 2mg/kg Lead
≤ 1mg/kg Mercury

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Polyquaternium-7
CAS: 108464-53-5; 26590-05-6

Specification

Body-care, Leave-on Products: Maximum residual acrylamide content 0.1 mg/kg

Other products Maximum residual acrylamide content 0.5 mg/kg

≤ 0.7% Isopropanol
≤ 0.4% Glyoxal (restricted to 100ppm in finished products)
≤ 2.2% Nitrogen
≤ 2% Ash (NaCl)
≤ 0.5ppm Epichlorhydrin
≤ 10ppm Trimethylamine

≤ 10ppm Heavy metals (total sum)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Potassium Sorbate
CAS: 590-00-1; 24634-61-5

Specification

Potassium Sorbate, as a food additive (E202) has minimum purity criteria expectations set with in EU Commission Regulation 231/2012:
Minimum 99% purity (dried)
≤ 1% loss on drying (105 °C, three hours)
≤ 1% acidity or alkalinity
≤ 0.1% aldehydes
≤ 3 ppm Arsenic
≤ 2 ppm Lead
≤ 1 ppm Mercury

White crystalline powder showing no change in colour after heating for 90 minutes at 105 °C

When used in products generally the manufacturer should consider:
< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Sodium Lauroyl Glutamate
CAS: 98984-78-2; 29923-31-7; 29923-34-0; 42926-22-7

Specification

Sodium Lauroyl Glutamate does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≤ 10ppm Heavy Metals (total sum)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Benzoic Acid
CAS: 65-85-0

Specification

With reference to E 210 Benzoic Acid in COMMISSION REGULATION (EU) No 231/2012 specifications for food additives

Arsenic Not more than 3 mg/kg
Lead Not more than 2 mg/kg
Mercury Not more than 1 mg/kg

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Propylene Glycol
CAS: 57-55-6; 4254-14-2

Specification

Propylene Glycol does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

Minimum purity of 97.5 percent by weight.
≤ 0.2% water,
≤ 0.07% Sulfated Ash
≤ 0.02% Propylene Oxide
≤ 5ppm Lead
≤ 3ppm Arsenic

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Substance: Sodium Glutamate
CAS: 32221-81-1; 16177-21-2; 6106-04-3; 142-47-2

Specification

Sodium Glutamate does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≤ 10 ppm Heavy Metals (sum of)

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1 ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10 ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens.

Substance: Tocopherol
CAS: 1406-18-4; 10191-41-0; 1406-66-2; 2074-53-5; 59-02-9; 148-03-8; 119-13-1; 54-28-4

Specification

Tocopherol does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

< 0.1% substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

With reference to E 307 Alpha-Tocopherol in COMMISSION REGULATION (EU) No 231/2012 specifications for food additives:

≥ 96% purity

[n]D20 1.503 - 1.507 Refractive Index

E1%1cm (292 nm) 71 - 76 Specific absorption in ethanol (0.01 g in 200 ml of absolute ethanol)

≤ 0.1% sulphated ash

≤ 2 mg/kg Lead

Substance: Sodium Hydroxide
CAS: 1310-73-2

Specification

Sodium Hydroxide does not have minimum purity specifications set within the EU Cosmetic (or related) Regulations.

The U.S. Pharmacopeia and Food Chemicals Codex provide acceptable levels of purity:
Arsenic NMT 3mg/kg
Carbonate NMT 3mg/kg
Lead NMT 3mg/kg
Mercury NMT 3mg/kg

Manufacturer should ensure that a suitably safe grade is used, including:

≤ 10ppm Heavy metals (total sum)

< 10ppm substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens

Substance: Hydrogenated Palm Glycerides Citrate
CAS: 91744-68-2 ; 91052-16-3

Specification

Hydrogenated Palm Glycerides Citrate doe not have minimum purity specifications set within the EU Cosmetic (or related) Regulations. Manufacturer should ensure that a suitably safe grade is used, including:

≤ 15ppm Aflatoxin

≤ 10ppm Heavy Metals (total sum)

< 10ppm substances classified as H317 (May cause an allergic skin reaction) in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 1ppm substances classified as Carcinogenic, Mutagenic or Reproductive Toxins in accordance with the EU Classification, Labelling & Packaging Regulation (1272/2008)

< 10ppm substances Prohibited or Restricted for use under Annex II or Annex III of the EU Cosmetic Regulation (1223/2009)

< 0.1% Substances of Very High Concern (SVHC), as defined under EU REACH Regulation (1907/2006)

Microbiological Specification: TVC ≤ 1,000 cfu/g, absence of specific pathogens