Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

COSMETIC PRODUCT SAFETY REPORT

In accordance with Annex I, EC 1223/2009 and The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019

Report Number	240050-8c (243864)	**Date:**	16 September 2024
Product type:	Melt and pour soap	**Responsible person details:**	Joe D'Arcy, 20 Heron Road, Bristol, BS5 0LU, United Kingdom
Product name/code:	Unscented with Shea Butter & Coconut Milk		
Product category:	Solid soap – Rinse off	**Email address:**	

SUMMARY

The product(s) have been reviewed and according to the information submitted in this report the product complies with EU Regulation (EC) No 1223/2009 and its subsequent amendments to date. The product(s) have been reviewed and according to the information submitted in this report the product complies with The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019 and its subsequent amendments to date. The ingredients in this product are used at levels that are consistent with industry norms.

It is my opinion that these cosmetic formulation(s) are considered safe to use under normal or reasonably foreseeable conditions of use. The assessment is conditional on the items outlined in section B.

Signed:

Laura Turnham, ERT, RSB CBiol, MSc

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

INDEX

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

PART A COSMETIC PRODUCT SAFETY INFORMATION

1. Quantitative and qualitative composition of the cosmetic product(s)

Product name: Unscented with Shea Butter & Coconut Milk soap

Ingredients	
INCI names	**% INCI**
Sodium Palmate	53.744685
Aqua	16.705719
Sodium Palm Kernelate	16.705719
Glycerin	7.159594
Butyrospermum Parkii Butter	3.028725
Cocos Nucifera Fruit Extract	1.006682
**********	**********
Sodium Chloride	0.095461
Kaolin	0.503341
Tetrasodium Glutamate Diacetate	0.477306
Citric Acid	0.095461
Sodium Citrate	0.477306

Total %: 100,000000

Allergen declarations above are based on the information on the date of submission. It is the duty of the Responsible Person to ensure that the ingredient and allergen declarations are correct on the label.

For the EU:
Cosmetic products containing additional allergens listed in COMMISSION REGULATION (EU) 2023/1545 will need to be declared on the labelling, when its concentration exceeds:
— 0,001 % in leave-on products

— 0,01 % in rinse-off products.

Products that do not comply with the restriction(s) may be placed on the Union market until 31 July 2026 and made available on the Union market until 31 July 2028. It is the duty of the Responsible Person when placing a cosmetic on sale in the EU to comply with this requirement by the implementation date.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

2. Physical/chemical characteristics and stability of the cosmetic product

A product specification was not provided.

Product name:	Description
Unscented with Shea Butter & Coconut Milkc soap	Solid soap with a characteristic fragrance.

The product was tested for stability in an in-house method. Stability data was not provided.

The responsible person must ensure that the product is sold with an appropriate expiry date.

There is a long history of stability of vegetable derived cold processed soaps. Stability is not expected to be a safety concern, provided that there is no excess lye in the formulation, and that the product is cured for a suitable length of time, typically 4-6 weeks. Rancidification of cold process soaps can occur under certain conditions, but it is a quality and aesthetic concern, not a safety concern.

3. Microbiological quality

The product(s) is a low risk for microbiological growth as the product is a soap-based formulation with low water availability. The product is likely to provide an environment that would deny microorganisms the physical and chemical requirements for growth and survival.

According to the principles outlined in ISO 29621:2017 this product would be considered a low microbiological risk and does not require a microbiological challenge test.

A microbiological specification was not provided. It is the duty of the responsible person to ensure that the product complies with the microbiological specifications outlined by SCCS/1628/21:

Types of microorganisms	Products specifically intended for children under three years of age, the eye area or the mucous membranes	Other products
Total Aerobic Mesophilic Microorganisms (Bacteria plus yeast and mould)	≤100 CFU / g or mL[a]	≤1000 CFU / g or mL[b]
Escherichia coli	Absence in 1 g or 1 ml	Absence in 1 g or 1 ml
Pseudomonas aeruginosa	Absence in 1 g or 1 ml	Absence in 1 g or 1 ml
Staphyloccocus aureus	Absence in 1 g or 1 ml	Absence in 1 g or 1 ml
Candida albicans	Absence in 1 g or 1 ml	Absence in 1 g or 1 ml

Due to inherent variability of the plate count method, according to USP Chapter 61 or EP Chapter 2.6.12, Interpretation of results, results considered out of limit if
a > 200 CFU/g or ml, b > 2 000 CFU/g or ml.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

4. Impurities, traces, information about the packaging material quality

Toxicologically relevant impurities of the raw materials will be discussed in Annex I.

The product may be placed in the following primary packaging:
Food safe pouches/wrap
Food safe cellophane
Wax paper
Paper
Cardboard

The product may be placed in the following secondary packaging:
Paper
Cardboard
Cloth bags (for example: bamboo, cotton, sisal).

The responsible person must ensure that the packaging is food or cosmetic grade.

The responsible person must ensure that the packaging is compatible with the product.

It is not expected that heavy metal impurities will be present in the raw materials in significant amounts. Therefore, heavy metals are expected to be below acceptable limits. According to Health Canada guidance (2012) "technically unavoidable" limits for cosmetics are considered to be:

Lead:	10 ppm
Arsenic:	3 ppm
Cadmium	3 ppm
Mercury	1 ppm
Antimony	5 ppm

5. Normal and reasonably foreseeable use

It is expected that consumers will moisten the bar with water, bring to a lather and wash their body with the soap, followed by rinsing.

It is foreseeable that consumers may also apply the product to their face followed by rinsing.

Should the product enter the eyes it is expected that the product will cause irritation. It is expected that consumers will be aware of this risk and should rinse their eyes should this occur.

Ingestion would be considered misuse and will not be covered in this report.

The Responsible Person must ensure that the product does not mimic foodstuffs in order to ensure consumer safety and to comply with local and regional laws/ regulations.

Inhalation is not expected as the product is not expected to generate respirable particles during use.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

6. Exposure to the cosmetic product

Product type:	Solid soaps		
Use per day (g)	2.60	Source:	US EPA Exposure Factors Handbook, 2011
Retention factor:	0.01		
Site of application:	Total body area		
Skin exposure (cm^2)	17500.00	Source:	SCCS Notes of Guidance, 12th Revision
IFRA 49th Amendment Class	9		
IFRA 49th Amendment Consumer Exposure Level Estimate $\mu g/cm^2/day$	200		
Frequency of application	3.0/day (US EPA Exposure Factors Handbook, 2011)		
Calculated relative daily exposure (mg/kg bw/day)	43.33		
Body weight (kg)	60.00	Default value	
IFRA QRA2 Aggregate Adjustment Factor	0.5		

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

7. Exposure to the substances

Product type:	Solid soaps	NESIL=No Expected Sensitization Induction Level
Product use per day (g):	2.6000	AEL-Acceptable Exposure Level
Retention factor:	0.0100	CEL=Consumer Exposure Level
Skin exposure (cm2)	17500.0000	
Body weight	60.0000	

INCI Name	Unscented with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? (Tick applies skin penetration data on all ingredients)	Skin penetration (%)	Dermal exposure ug/cm2	NESIL	Safety Factor	AEL/CEL	Acceptable Exposure Level ug/cm2
Aqua	16.7057	7732-18-5	231-791-2	Solvent	N/A	16.70572	0.07239	No Data			100	0.248	No Data	300		
Butyrospermum Parkii Butter	3.0287	194043-92-0 - 91080-23-8	293-515-7	Skin Conditioning, Viscosity Controlling	N/A	3.02873	0.01312	No Data			100	0.045	No Data	300		
Citric Acid	0.0955	77-92-9 / 5949-29-1	201-069-1	Buffering, Chelating, Masking	N/A	0.09546	0.00041	1200	2900903		100	0.001	No Data	300		
Cocos Nucifera Fruit Extract	1.0067	8001-31-8	232-282-8	Emollient, Hair Conditioning, Skin Conditioning	N/A	1.00668	0.00436	No Data			100	0.015	No Data	300		
Glycerin	7.1596	56-81-5	200-289-5	Denaturant, Hair Conditioning, Humectant, Oral Care, Perfuming, Skin Protecting, Viscosity Controlling	N/A	7.15959	0.03102	10000	322322		100	0.106	No Data	300		
Kaolin	0.5033	1332-58-7	310-194-1	Abrasive, Absorbent, Anticaking, Bulking, Cosmetic Colorant, Opacifying	IV/119	0.50334	0.00218	10000	4584749		100	0.007	No Data	300		
Sodium Chloride	0.0955	7647-14-5	231-598-3	Bulking, Masking, Oral Care, Viscosity Controlling	N/A	0.09546	0.00001	50	4029032		3	0.001	No Data	300		
Sodium Citrate	0.4773	68-04-2 / 6132-04-3	200-675-3	Buffering, Chelating, Masking	N/A	0.47731	0.00207	No Data			100	0.007	No Data	300		
Sodium Palm Kernelate	16.7057	61789-89-7	263-097-0	Cleansing, Emulsifying, Surfactant, Viscosity Controlling	N/A	16.70572	0.07239	1000	13814		100	0.248	No Data	300		
Sodium Palmate	53.7447	61790-79-2	263-162-3	Cleansing, Emulsifying, Surfactant, Viscosity Controlling	N/A	53.74469	0.23289	1000	4294		100	0.798	No Data	300		
Tetrasodium Glutamate Diacetate	0.4773	51981-21-6	257-573-7	Chelating	N/A	0.47731	0.00207	300	145045		100	0.007	No Data	300		

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

8. Toxicological profile of the substances

The raw materials in this product were from recognised cosmetic, food or pharmaceutical grade ingredient suppliers. The responsible person is responsible for retaining all Certificates of Analysis (COAs), Technical documentation, MSDSs and retaining the information for the Product Information File (PIF). IFRA and allergen statements must be kept up to date and retained in the PIF file by the responsible person.

Toxicological profiles of ingredients found in Annex I of this document. Technically unavoidable traces of prohibited or restricted chemicals are also addressed in Annex I.

9. Undesirable effects and serious undesirable effects

No reports of undesirable or serious undesirable effects have been submitted. In the event that adverse reaction(s) occur the responsible person should inform the safety assessor so that the safety assessment can be updated and reviewed.

10. Additional information on the cosmetic product

The product must be manufactured according to the principles of GMP (Good Manufacturing Practice). It is recommended that the product is manufactured according to the principles outlined in ISO 22716: 2007.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

PART B – COSMETIC PRODUCT SAFETY ASSESSMENT

1. Assessment conclusion

This product has been reviewed and according to the information submitted in this report. The product complies with EU Regulation (EC) No 1223/2009 and its subsequent amendments to date. The product has been reviewed and according to the information submitted in this report the product complies with The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019 and its subsequent amendments to date.

This report has reviewed the following;

- Microbiological safety, stability and physicochemical status of the product
- Packaging.
- Toxicological impurities in the packaging materials/raw materials.
- Systemic toxicity.
- Developmental/reproductive toxicity.
- Carcinogenicity/mutagenicity.
- Allergy (Type I, IV).
- Skin and eye irritancy.
- Photosensitivity and photosensitisation.

The product is considered safe and unlikely to cause an unreasonable level of adverse effects if used under normal and reasonably foreseeable conditions.

2. Labelled warnings and instructions of use

Mandatory label requirements: None.

Non mandatory but advisable warning statement:

"If product enters the eyes, rinse well with clean water."

"Keep out of reach of children."

Directions for use:
Directions for use were not provided for review.

Warnings:
Warnings were not provided for review.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

3. Reasoning

The product has been reviewed and according to the information submitted in this report the product complies with EU Regulation (EC) No 1223/2009 and its subsequent amendments to date. The product has been reviewed and according to the information submitted in this report the product complies with The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019 and its subsequent amendments to date. The ingredients in this product are used at levels that are consistent with industry norms.

The Responsible Person must ensure that the purity/impurity criteria for ingredients outlined in Annex I are adhered to.

The Responsible Person must ensure that the product is manufactured in accordance with GMP.

The Responsible Person is responsible for the maintenance of the PIF (Product Information File).

The product is considered safe and unlikely to cause an unreasonable level of adverse effects if used under normal and reasonably foreseeable conditions.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

4. Assessor's credentials and approval of part B

The product has been reviewed and according to the information submitted in this report the product complies with EU Regulation (EC) No 1223/2009 and its subsequent amendments to date.

The product has been reviewed and according to the information submitted in this report the product complies with The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019 and its subsequent amendments to date

The ingredients in this product are used at levels that are consistent with industry norms.

It is my opinion that this cosmetic formulation is considered safe to use under normal or reasonably foreseeable conditions of use. The assessment is conditional on the items outlined in section B.

Signed:

Laura Turnham, ERT, RSB CBiol, MSc

Qualifications:

Safety assessment of cosmetics in the EU, VUB (University of Brussels), 2015, Pass

MSc Molecular Pathology and Toxicology, Leicester University (UK), 2011. Distinction.

BSc Biochemistry (Toxicology), University of Surrey, 2008, 2:1 (Hons).

Eurotox registered toxicologist (ERT).

UK Registered Toxicologist (UKRT).

Chartered Biologist (CBiol RSB).

Member of the Royal Society of Biology (MRSB).

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Annex I – Toxicological Ingredient Profiles

Ingredient Profile: Butyrospermum Parkii (Shea) Butter

CAS number: 91080-23-8 / 194043-92-0 **EC number:** 293-515-7 (I)

INCI Name: Butyrospermum Parkii Butter

Pseudonyms: Butyrospermum Parkii (Shea) Butter, Karite Butter.

Structure: N/A **Image:**

CLP Hazard classification(s): Not classified

REGULATION (EC) No 1223/2009 Not restricted.

Other regulatory statuses: N/A

INCI Name	Unneutralized with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply non penetration data? (Yes = applied for assessment, blank = not applied)	Skin penetration (%)	Dermal exposure (g/cm²)	NOEL	Safety Factor	AGL/CEL	Acceptable Exposure Level (g/cm²)
Butyrospermum Parkii Butter	3.0787	194043-92-0 - 91080-23-8	293-515-7	Skin Conditioning, Viscosity Controlling	N/A	3.078/3	0.01317	No Data			100	0.045	No Data	300		

Butyrospermum Parkii (Shea) Butter is a fat obtained from the fruit of Butyrospermum parkii. The accepted scientific name for Butyrospermum parkii is Vitellaria paradoxa. It is used as a skin conditioning agent, an occlusive agent and viscosity increasing agent in cosmetic products.

According to the CIR review[1], Butyrospermum Parkii (Shea) Butter typically contains; myristic acid (0.5%), palmitic acid (3-9%), stearic acid (30-50%), oleic acid (38-50%), linoleic acid (3-8%) linolenic acid (0.5%) and arachidic acid (2.5-3%). Butyrospermum Parkii (Shea) Butter is reported to be used at up to 60% in leave on products, up to 8% in products used in the eye area, up to 26% in products that may be ingested, up to 3% in products that may be inhaled, up to 15% in products that are dermally applied, up to 60% in products used on the nail area, and up to 5% in baby products[1].

In a HRIPT performed on 111 individuals with a body butter product containing 60% Butyrospermum Parkii (Shea) Butter. No irritation or sensitisation was reported. A body butter massage product containing 45% Butyrospermum Parkii (Shea) Butter was tested in 4 HRIPTs each tested on 109 individuals. No irritation or sensitisation was observed. On the basis of HRIPT and negative results *in vitro* skin irritation assays Butyrospermum Parkii (Shea) Butter is not expected to cause irritation or sensitisation. No reports of contact dermatitis exist in the literature. Protein content of shea butter is very low[2] (0.042%) and no reports of type I allergy exists in the literature. Phototoxicity is not expected.

Vegetable based fatty acids have a long history of safe use in the diet in edible oils, such as rapeseed oil, palm oil, olive oil and other vegetable-based oils. According to JECFA palmitic acid, stearic acid, lauric acid and oleic acid are do not have any safety concerns in the diet[3]. When applied topically fatty

acids have been shown to remain mainly on the outer layers of the stratum corneum with little penetration[4]. Therefore, systemic toxicity is not expected.

Summary:

The concentration and use of Butyrospermum Parkii (Shea) Butter is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity endpoints such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. IJT 36(Suppl. 3):51-129, 2017
2. Journal of Allergy and Clinical Immunology; 127, Iss. 3, (Mar 2011): 680-682
3. JECFA, WHO Food Additives Series No. 40, 1998.
4. Patzelt, A & Lademann, J & Richter, H & Darvin, Maxim & Schanzer, S & Thiede, Gisela & Sterry, Wolfram & Vergou, Theognosia & Hauser, Matthias. (2011). In vivo investigations on the penetration of various oils and their influence on the skin barrier. Skin research and technology : official journal of International Society for Bioengineering and the Skin (ISBS) [and] International Society for Digital Imaging of Skin (ISDIS) [and] International Society for Skin Imaging (ISSI). 18. 364-9. 10.1111/j.1600-0846.2011.00578.x.

Specification data:
No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
Skin irritation	OECD 404	Rabbit: Very slightly irritating at up to 100%	Secondary source: IJT 36(Suppl. 3):51-129, 2017Animal test date: 1999
Eye irritation	OECD 405	Rabbit: Non irritating at up to 100%	Secondary source: IJT 36(Suppl. 3):51-129, 2017Animal test date: 1985
Skin sensitisation	OECD 406	Negative in a Maximisation study at up to 75% (induction) and 20% (challenge)	Secondary source: IJT 36(Suppl. 3):51-129, 2017Animal test date: 1985
Repeated dose 90-day oral toxicity study in rodents	OECD 408	No toxicity observed in rats fed up to 20% in the diet.	Secondary source: JEPT 4(4):105-120, 1980 Animal test date: 1980

Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test	OECD 422	NOAEL rat: 7500 mg/kg bw/day	Secondary source: Safety Assessment of Butyrospermum parkii (Shea)- Derived Ingredients as Used in Cosmetics, 2017 Animal test date: 2002
***In vitro* 3T3 NRU phototoxicity test**	OECD 432	Not phototoxic	Secondary source: Safety Assessment of Butyrospermum parkii (Shea)- Derived Ingredients as Used in Cosmetics, 2017 Non animal test
Chronic toxicity studies	OECD 452	NOAEL rat: 7500 mg/kg bw/day	Secondary source: Safety Assessment of Butyrospermum parkii (Shea)- Derived Ingredients as Used in Cosmetics, 2017 Animal test date: 2001
***In vitro* skin irritation: reconstructed human epidermis test method**	OECD 439	Non irritating up to 67.3%	Secondary source: IJT 36(Suppl. 3):51-129, 2017 Non animal test data.
***In Chemico* skin sensitisation**	OECD 442c	Not a sensitiser.	Safety Assessment of Butyrospermum parkii (Shea)- Derived Ingredients as Used in Cosmetics, 2017 Non animal test data.
***In vitro* bacterial reverse mutation test**	OECD 471	Not mutagenic up to 5000 µg/plate ±S9	Secondary source: Safety Assessment of Butyrospermum parkii (Shea)- Derived Ingredients as Used in Cosmetics, 2017 Non animal test data.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Citric Acid

CAS number:	5949-29-1 / 77-92-9	**EC number:**	201-069-1 (I)

INCI Name: Citric Acid

Pseudonyms: 2-Hydroxy-1,2,3-Propanetricarboxylic Acid, acidum citricum (EP).

Structure:

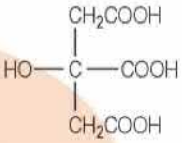


Image:

CLP Hazard classification(s): H319 Causes serious eye irritation

REGULATION (EC) No 1223/2009 Not restricted.

Other regulatory statuses: Food:
USFDA: GRAS, approved indirect and direct food addictive (21CFR178.1010, 21CFR184.1033).
JEFCA: Not restricted.
EU: Approved food additive.

Cosmetics:
Canada Hotlist: (AHAs)
FDA: AHAs
EU: Not restricted

INCI Name	Unwashed with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restriction	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? (Yes applies skin penetration data, No does not apply skin penetration data)	Skin penetration (%)	Dermal exposure (ug/cm2	NOAEL	Safety Factor	ADI/DEL	Acceptable Exposure Level (ug/cm2
Citric Acid	0.0955	77-92-9 / 5949-29-1	201-069-1	Buffering, Chelating, Masking	N/A	0.09546	0.00041	1200	2900903		100	0.001	No Data	300		

Citric acid is an inorganic acid. It is naturally occurring in fruits with up to 8% of the dry weight of lemons and lime accounting for citric acid[1]. It is used as a chelating agent, fragrance ingredient and pH adjuster in cosmetic products.

Citric acid is an approved in direct and direct food additive by the USFDA (21CFR178.1010, 21CFR184.1033) and is considered to be Generally Recognised As Safe (GRAS). Citric acid was reviewed by JEFCA/WHO as a food additive and is not limited in foods. Citric acid is an approved food additive in the EU (E330).

According to the CIR review citric acid is used up to 35% in bath products (Such as bath salts/bath bombs), up to 10% in rinse off products and up to 4% in leave on products. It is used at up to 3% in products that may be ingested, up to 2% in products used in the eye area and 0.2% in baby products.

Citric acid when orally administered is well absorbed and metabolised. Citric acid is also produced endogenously as a part of normal metabolism, where is completes the breakdown of pyruvate produced from glucose metabolism. Approximately 2 Kg of citric acid is metabolised every day in humans. Citric acid is freely filterable in the kidney and 65-90% of citric acid is reabsorbed[2]. Therefore as citric acid is present in the diet naturally in addition to synthetic sources, coupled with endogenous

production of citric acid, systemic toxicity from cosmetic products containing citric acid is not expected.

Citric acid has a low acute oral toxicity. Citric acid can cause coughing in humans and in animal models when inhaled in high concentrations, the cough reflex is produced by irritation to the larynx and trachea[2]. In animal models citric acid is slightly irritating to the skin and severely irritating to the eyes. In a 48h patch test of 1% citric acid in 133 oral disease patients there were no reactions to citric acid[2]. however according to the OECD SIDS report[3] citric acid can cause a stinging sensation at 2% aqueous solutions. This effect was not related to irritation, therefore, although it is not necessarily a safety concern, it is recommended to limit the level of citric acid in aqueous cosmetics as high levels of citric acid topically is not always tolerated by the consumer.

Citric acid has been tested in a HRIPT test. Patches of a cuticle cream containing 4% citric acid were applied 3 times a week for 3 weeks followed by a rest period. There were no reports of irritation or sensitisation[2].

Citric acid is considered an alpha hydroxy acid by the USFDA and Health Canada, at high levels in leave on products it is recommended to place a suncare warning on the labelling.

Summary:

The concentration and use of citric acid is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. Journal of Endourology. 22 (3): 567–570
2. IJT 33(Suppl.2):16-46, 2014
3. OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Recommended minimum specification:

Appearance:	White crystalline powder or crystals
Lead:	<0.5 mg/kg
Arsenic:	<3 mg/kg
Mercury:	<1 mg/kg

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source

Acute oral toxicity	Not to GLP	Mouse LD_{50}: 5400 mg/kg	Secondary source: SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: 1981
Dermal irritation	OECD 404, not to GLP	Rabbit: Slightly irritating	Secondary source: OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: 1991.
Eye irritation	Draize, not to GLP	Rabbit: At 10%, 30% citric acid was mildly to moderately irritating.	Secondary source: OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: 1984
Reproductive/developmental toxicity	Pre-guideline test data.	Rats NOAEL: 2500 mg/kg bw/day	Secondary source: OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: 1976.
***In vitro* Bacterial Reverse Mutation Test**	OECD 471	Not mutagenic up to 5000 µg/plate ±S9	Secondary source: OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: Non animal test method.
Chronic systemic toxicity	Pre-guideline test data.	NOAEL rat: 1200 mg/kg bw/day fed 3 and 5% citric acid in the diet for 2 years.	Secondary source: OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: 1957
Chronic systemic toxicity	Pre-guideline test data.	NOAEL dog: 1380 mg/kg bw/day fed in the diet for up to 120 days.	Secondary source: OECD SIDS Initial Assessment Report for 11th SIAM, Citric acid, 2001 Animal test date: 1946
Supporting data	N/A	In humans a 2% aqueous solution of citric acid can cause a stinging sensation that is not related to irritation.	SIDS Initial Assessment Report for 11th SIAM, 2001
Supporting data	N/A	HRIPT of 60 ezcema patients with 2.5% citric acid in petrolatum did not cause any irritant reactions	SIDS Initial Assessment Report for 11th SIAM, 2001

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

Ingredient Profile: Cocos Nucifera (Coconut) Fruit Extract

CAS number:	N/A	**EC number:**	N/A
INCI Name:	Cocos Nucifera Fruit Extract		
Pseudonyms:	Cocos Nucifera (Coconut) Fruit Extract		
Structure:	N/A	**Image:**	
CLP Hazard classification(s):	Not classified		
REGULATION (EC) No 1223/2009	Not restricted.		
Other regulatory statuses:	N/A		

INCI Name	Unscented with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present at Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? [illegible]	Skin penetration (%)	Dermal exposure ug/cm2	NESIL	Safety Factor	AEL/CEL	Acceptable Exposure Level ug/cm2
Cocos Nucifera Fruit Extract	1.0067	8001-31-8	232-282-8	Emollient, Hair Conditioning, Skin Conditioning	N/A	1.00668	0.00436	No Data		[illegible]	100	0.015	No Data	300		

Cocos Nucifera (Coconut) Fruit Extract is the extract of Cocos Nucifera (Coconut) Fruit. Cocos Nucifera (Coconut) Fruit Extract is used as a skin conditioning agent in cosmetic products.

Cocos Nucifera (Coconut) is an edible fruit, the coconut meat is eaten fresh or dried in cooking and baking. The coconut water and milk is also edible. There is a long history of safe use in the diet of coconut oil, coconut milk, coconut juice and coconut meat. Therefore, systemic toxicity is not expected.

According to the CIR review[1] Cocos Nucifera (Coconut) Fruit Extract is used at up to 0.02% in leave on products. Other coconut-based extracts are used at up to 6.5% in rinse off and up to 1.5% in leave on products.

Coconut milk has a long history of use as a Traditional Herbal Medicinal as a topical antiseptic, astringent and for the treatment of oral ulcers[2]. Given the long history of topical use, skin irritation and skin sensitisation is not expected.

Allergy to coconut (type I and IV) have been reported but is considered to be rare[3]. Allergy to tree nuts is not associated with coconut allergy[3].

Summary:

The concentration and use Cocos Nucifera (Coconut) Fruit Extract is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity endpoints such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

References:

1. CIR, Tentative Report, Safety Assessment of Cocos nucifera (Coconut)-Derived Ingredients as Used in Cosmetics, 2020.
2. Asian Agri-History Vol. 18, No. 3, 2014 (221–248) 221.
3. The Journal of Allergy and Clinical Immunology: In Practice Volume 8, Issue 10, November–December 2020, Pages 3657-3659.

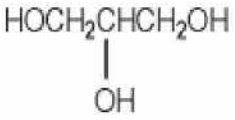
Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Glycerin

CAS number:	56-81-5	**EC number:**	200-289-5 (I)
INCI Name:	Glycerin		
Pseudonyms:	Glycerine, Glycerol		
Structure:	$C_3H_8O_3$	**Image:**	
CLP Hazard classification(s):	N/A		
REGULATION (EC) No 1223/2009	Not restricted.		
Other regulatory statuses:	Cosmetics: Canada Hotlist. Food: Approved EU food additive - E422		

INCI Name	Uncoated with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restriction	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? (Yes = penetration percentage used in calculation of systemic dose)	Skin penetration (%)	Dermal exposure (g/cm²)	NOEL	Safety Factor	ADI/CEL	Acceptable Exposure Level (g/cm²)
Glycerin	7.1596	56-81-5	200-289-5	Denaturant, Hair Conditioning, Humectant, Oral Care, Perfuming, Skin Protecting, Viscosity Controlling	N/A	7.15959	0.03810	10000	262467		100	0.106	No Data	100		

Glycerin is a polyhydric alcohol. Glycerin is classified as GRAS (Generally Recognised as Safe) by the USFDA (21CFR182.90). It is approved for use as an indirect and direct food additive by the USFDA (21CFR175.300, 21CFR172.866. According to the CIR (Cosmetic Ingredient Review Expert Panel) 2014 report glycerine is used at up to 79.2% in leave on products, up to 99.4% in rinse off products, up to 47.9% in products used in the eye area, and up to 68.6% in products which may incur incidental ingestion.

The U.S. Pharmacopeia-National Formulary (USP-NF) standards state that the amount of any individual impurity in glycerin cannot exceed 0.1%, and that the total for all impurities, including diethylene glycol and ethylene glycol, must not exceed 1%.

The technical data sheet for the raw material for this product indicates that the product is made to USP/EP standards.

Glycerin is rapidly absorbed in the intestine and stomach. Glycerol is phosphorylated to alpha-glycerophosphate by glycerol kinase predominantly in the liver (80-90%) and kidneys (10-20%) and incorporated in the standard metabolic pathways to form glucose and glycogen. Glycerin is also naturally occurring in all animals and plant matter as glycerides in fats and oils, or, in intracellular spaces as lipids[1].

According to the CIR glycerine has low acute oral and dermal toxicity (LD50 27,200 mg/kg and >18,700 mg/kg bw/day respectively) and undiluted glycerine is non irritating to the eyes and skin in testing performed on rabbits. Glycerin was negative for genotoxicity in a barrage of in vitro and in vivo toxicity tests. Natural and synthetic glycerine was non sensitising in tests performed in guinea pigs[1].

According to the OECD SIDS report for glycerol there was no concern for carcinogenicity in 2-year dietary studies (up to 20% glycerine in diet) equivalent to 10,000 mg/kg bw/day. This was determined

to be the NOAEL by the OECD report. Glycerin was tested in a developmental toxicity test in rats, mice and rabbits. The NOAEL was >2000 mg/kg bw/day the highest dose tested[2].

The CIR panel concluded that glycerin is safe when used at present practices of use and concentration. Glycerin not restricted according to Regulation (EC) No. 1223/2009. The use of glycerin is acceptable in this product type and application.

References:

1. CIR, Safety Assessment of Glycerin as Used in Cosmetics, 2015
2. SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
Acute oral toxicity	OECD 401	Rat LD_{50}: >27,200 mg/kg	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Prior to 1953
Acute dermal toxicity	OECD 402	Rat LD_{50}: >18,700 mg/kg	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Prior to 1953
Skin irritation	OECD 404	Rabbit: Undiluted non irritating	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Prior to 1971
Eye irritation	OECD 405	Rabbit: Undiluted non irritating	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Prior to 1953
Two-Generation Reproduction Toxicity Study	OECD 416	NOAEL maternal & foetal rat: >2000 mg/kg bw/day	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Prior to 1953

Carcinogenicity	Non guideline study	NOAEL rat: >10,000 in the diet. 2 year study.	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Prior to 2002
Bacterial mutagenicity	OECD 471	Not mutagenic ±S9	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Non animal test method
In Vitro Mammalian Mutagenicity Test	OECD 476	Negative up to cytotoxic dose levels.	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Non animal test method
Mammalian Bone Marrow Chromosome Aberration Test	OECD 475	Negative up to cytotoxic dose levels.	Secondary source: SIDS Initial Assessment Report For SIAM 14 Paris, France, 26-28 March 2002 Animal test date: Non animal test method

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Kaolin

CAS number:	1332-58-7	**EC number:**	N/A
INCI Name:	1332-58-7		
Pseudonyms:	China Clay, CI 77004		
Structure:	$Al_2Si_2O_5(OH)_4$	**Image:**	
CLP Hazard classification(s):	H373 – May cause damage to organs (lungs) through prolonged or repeated exposure		
REGULATION (EC) No 1223/2009	IV/119		
Other regulatory statuses:	Food: USFDA: GRAS, approved direct food addictive (21CFR184.1077). JEFCA: ADI not restricted EU food additive E559		

INCI Name	Unscented with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? (Yes = applies the penetration data as well as ingredient)	Skin penetration (%)	Dermal exposure (µg/cm2	NOEL	Safety Factor	ADI/OEL	Acceptable Exposure Level (µg/cm2
Kaolin	0.5033	1332 58 7	310 194 1	Abrasive, Absorbent, Anticaking, Bulking, Cosmetic Colorant, Opacifying	IV/119	0.50334	0.00218	10000	4584749		100	0.007	No Data	300		

Kaolin is a native hydrated aluminium silicate. Kaolin is a natural component of the soil and occurs widely in ambient air. Kaolin mining and refining involve considerable exposure, and significant exposure is also expected in paper, rubber, and plastic production.

Kaolin is used as an absorbent agent, anticaking agent, bulking agent, opacifying agents, skin protectants, and slip modifiers.

Kaolin is an approved indirect food additive by the USFDA (21CFR186.125) and is considered to be Generally Recognised As Safe (GRAS). Kaolin is approved as an OTC ingredient as a digestive aid, antidiarrheal aid (21CFR310.545, 21CFR335.10).

Kaolin may cause mechanical irritation to the eyes and skin. In animal models kaolin was not irritating to the skin[1].

According to the CIR review kaolin is used at levels of up to 84% in face masks, up to 36% in foundations, up to 30% in lipsticks, up to 25% in moisturizers and up to 25% in suntan gels/creams. The CIR concluded that there is a concern regarding occupational exposure to kaolin via inhalation which has been related to case reports of fibrosis and silicosis in humans. However, in cosmetic preparations inhalation is not expected. It concluded that kaolin was safe as currently used in cosmetics[1].

Skin sensitisation has not been reported to kaolin despite widespread use in medicines, cosmetics and food/food contact materials. According to suppliers MSDSs skin sensitisation was not observed in LLNA testing (details not provided). Skin sensitisation is not expected.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

Orally kaolin is considered to be relatively inert, the only toxicological effects appear to derive from its adsorptive abilities. The lethal dose for humans is considered to be >15 g/kg[3]. Kaolin was well tolerated in a 90 day oral study up to 20% in the diet (~10,000 mg/kg bw/day)[1]. Systemic toxicity is not expected in the current application.

Regarding inhalation risk, it is well established that clay minerals may cause long term lung damage, usually observed with occupational exposure. According to a WHO report, kaolin inhalation may lead to a relatively benign form of pneumoconiosis, known as kaolinosis. Based on occupational exposure from china clay workers in the UK it has been estimated that "kaolin is at least an order of magnitude less potent than quartz".

In the proposed usage it is not anticipated that consumers will be exposed to respirable particles, therefore lung toxicity is not expected.

Summary:

The concentration and use of kaolin is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. IJT 22(Suppl. 1):37-102, 2003
2. Environmental Health Criteria 231, BENTONITE, KAOLIN, AND SELECTED CLAY MINERALS, World Health Organization Geneva, 2005 https://www.who.int/ipcs/publications/ehc/ehc_231.pdf
3. CFNP TAP Review for Kaolin Pectin, 2002

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
Acute oral toxicity	Not to guideline	Rat LD_{50}: 149 g /kg	Secondary source: 1.IJT 22(Suppl. 1):37-102, 2003 Animal test date: 1977
Acute dermal toxicity		Rat LD_{50}: >5000 mg/kg	Secondary source: HSDB database Animal test date:
Dermal irritation	OECD 404	Rabbit: Not irritating	Secondary source: REACH Dossier Animal test date: 2000.
Acute eye irritation	OECD 405	Rabbit: causes mechanical irritation. Moderate eye irritant	Secondary source: HSDB database Animal test date: 2007
Sensitization: Local Lymph Node Assay	OECD 429	Not sensitising	Secondary source: Suppliers MSDS Animal test date: Prior to 2013

3 month inhalation study	Not to guideline	Rats administered 50 mg/rat displayed pulmonary toxicity signs of fibrogenesis	Secondary source: I.IJT 22(Suppl. 1):37-102, 2003 Animal test date: 1975
90 day oral study	Not to guideline	Rats fed either a 20% kaolin diet which was either iron supplemented or kaolin alone. There was a significant reduction in haemoglobin, hemaocrit and RBC numbers. This was not seen in the iron supplemented diet, suggesting toxicity was related to adsorption.	Secondary source: I.IJT 22(Suppl. 1):37-102, 2003 Animal test date: 1977
Supporting data	ADI	Not restricted	Joint FAO/WHO Expert Committee on Food Additives which met in Geneva, 25 June - 4 July 1973

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Sodium Chloride

CAS number:	7647-14-5	**EC number:**	231-598-3 (I)
INCI Name:	Sodium Chloride		
Pseudonyms:	Salt, rock salt		
Structure:	NaCl	**Image:**	
CLP Hazard classification(s):	N/A		
REGULATION (EC) No 1223/2009	Not restricted		
Other regulatory statuses:	N/A		

INCI Name	Unwanted with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? (Yes or No for product and ingredient)	Skin penetration (%)	Dermal exposure (g/cm2	NESIL	Safety Factor	AEL/DEL	Acceptable Exposure Level (g/cm2
Sodium Chloride	0.0955	7647 14 5	231 598 3	Bulking, Masking, Oral Care, Viscosity Controlling	N/A	0.09546	0.00001	50	4029312		3	0.001	No Data	300		

Sodium Chloride an inorganic salt. Sodium chloride is the major salt responsible for the salinity of sea water. It is used as a flavouring agent, condiment and food preservative in foods. It is used as a flavouring agent, oral care agent and viscosity increasing agent in cosmetic products.

Sodium chloride is consumed at ~10g/day in Western countries, with the majority of salt coming from processed food and restaurant food. Due to the concern regarding sodium consumption and increased risk of cardiovascular diseases it is recommended to limit salt to less than 3 g/day[1].

Sodium chloride is not expected to cause irritation to the skin at concentrations of less than 10% according to testing on rabbits, sodium chloride may cause transient eye irritation at similar concentrations. Sodium chloride was not genotoxic in *in vitro* assays

Summary:

The concentration and use of sodium chloride is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Systemic toxicity is not expected at the proposed level and usage. Local toxicity endpoints such as skin and eye irritation, sensitisation is not expected at the proposed level and usage. There are no toxicological concerns with the proposed application under normal usage scenarios.

References:

1. He Feng J, Li Jiafu, MacGregor Graham A. Effect of longer term modest salt reduction on blood pressure: Cochrane systematic review and meta-analysis of randomised trials BMJ 2013; 346 :f1325

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Supporting test data:

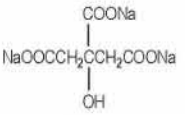
The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
Acute Oral Toxicity	OECD 401	Rat LD50: 3550 mg/kg	Secondary source: REACH dossier Animal test date: Not declared.
Acute Dermal Toxicity	OECD 402	Rat LD50: >10,000 mg/kg	Secondary source: REACH dossier Animal test date: Not declared.
Dermal Irritation	OECD 404	In contact with intact skin, sodium chloride causes no irritation, however on abraded skin 20% solutions can cause scab and scarring, at 10% slight irritation is observed.	Secondary source: REACH dossier Animal test date: 1954
***In Vitro* Bacterial Genotoxicity Assay**	OECD 471	Negative ±S9	Secondary source: REACH dossier Animal test date: Non animal test method
In vitro Mammalian Cell Micronucleus Test	OECD 487	Negative	Secondary source: REACH dossier Animal test date: Non animal test data

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Sodium Citrate

CAS number:	994-36-5 / 6132-04-3 (dihydrate) / 68-04-2 (anhydrous)	**EC number:**	213-618-2 (I) / 200-675-3 (I)
INCI Name:	Sodium Citrate		
Pseudonyms:	Citric Acid, Trisodium Salt		
Structure:	$C_6H_5O_7 \cdot 3Na$	**Image:**	
CLP Hazard classification(s):	Not classified		
REGULATION (EC) No 1223/2009	Not restricted.		
Other regulatory statuses:	N/A		

INCI Name	Use at Max Conc in Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Reported in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Skin penetration (%)	Dermal exposure ug/cm2	NESIL	Safety Factor	AEL/CEL	Acceptable Exposure Level ug/cm2
Sodium Citrate	0.47/33	68-04-2 / 6132-04-3	200-675-3	Buffering, Chelating, Masking	N/A	0.47/33	0.0000/ No Data			100	0.00/ No Data		100		

Sodium Citrate is the sodium salt of citric acid. Sodium Citrate is used as a buffering agent, chelating agent, pH adjuster and fragrance ingredients in cosmetic products.

According to the CIR review[1] Sodium Citrate is typically used at up to 10% in leave on products and up to 10% in rinse off products, up to 2% in products used in the eye area, up to 0.4% in products which may be ingested, up to 4% in hair products, up to 0.5% in nail products and up to 1% in products which may be used on the mucous membrane. In a human irritation study Sodium Citrate was not irritating to the skin at 10%[1]. Citric acid and its salts have not reported to be a sensitiser in human studies[1]. Sodium Citrate was not genotoxic in an *in vitro* Ames study.

Upon ingestion it is expected that Sodium Citrate will dissociate into Citric acid and sodium. When orally administered is well absorbed and metabolised. Citric acid is also produced endogenously as a part of normal metabolism, where is completes the breakdown of pyruvate produced from glucose metabolism. Approximately 2 Kg of citric acid is metabolised every day in humans. Citric acid is freely filterable in the kidney and 65-90% of citric acid is reabsorbed[2]. Therefore, as citric acid is present in the diet naturally in addition to synthetic sources, coupled with endogenous production of citric acid, systemic toxicity from cosmetic products containing citric acid/ sodium citrate is not expected.

Summary:

The concentration and use of Sodium Citrate is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity endpoints such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. IJT 33(Suppl.2):16-46, 2014

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
***In vitro* bacterial reverse mutation test**	OECD 471	Not genotoxic 5000 µg/plate ±S9.	Secondary source: IJT 33(Suppl.2):16-46, 2014 Non animal test data.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Sodium Palm Kernelate

CAS number:	61789-89-7	**EC number:**	263-097-0 (I)
INCI Name:	Sodium Palm Kernelate		
Pseudonyms:	Palm Kernel Acids, Sodium Salt		
Structure:	N/A	**Image:**	N/A
CLP Hazard classification(s):	Not classified		
REGULATION (EC) No 1223/2009	Not restricted.		
Other regulatory statuses:	N/A		

INCI Name	Unwanted with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? (Yes = apply the penetration data as all ingredients)	Skin penetration (%)	Dermal exposure (ug/cm2)	NOEL	Safety Factor	ADI/DEL	Acceptable Exposure Level (ug/cm2)
Sodium Palm Kernelate	16.7057	61789-89-7	263-097-0	Cleansing, Emollying, Surfactant, Viscosity Controlling	N/A	16.7057	0.07739	1000	13014		100	0.2487	No Data	300		

Sodium Palm Kernelate is the sodium salt of the acids derived from palm kernel oil.

In soap making; oils such as palm oil are saponified with lye (sodium hydroxide) to make the sodium fatty acid salt and glycerin.

The earliest evidence of soap making comes from soap deposits found in Egypt dated to ~2800 BC, inscriptions state the fats were boiled with ashes. There is evidence from 1500 BC that soaps were used for washing and treating skin diseases[1]. Soaps made with vegetable oils or animals fats have a long history of safe use for skin cleansing purposes.

Sodium Palm Kernelate is used as a surfactant and cleansing agent in cosmetic products. Elaeis Guineensis (Palm) Oil consists of[2]; up to 44% palmitic acid, up to 0.1% % palmitoleic acid, up to 4.5% stearic acid, up to 39.2% oleic acid, up to 10.1% linoleic acid and up to 0.4% linolenic acid. Saponification of olive oil with lye would create sodium palmitate, sodium stearate and their respective sodium salts of the fatty acids. Depending on the superfatting level there may be some unreacted fatty acids.

The CIR review[2] determined that Sodium Laurate/Linoleate/Oleate/Palmitate (major constituents of Sodium Palm Kernelate)[3] is used at up to 84.7% in rinse off products, up to 74.5% in leave on products, up to 74.5% in baby products and up to 84.7% in products applied to the mucous membranes.

Vegetable based fatty acids have a long history of safe use in the diet in edible oils, such as rapeseed oil, palm oil, olive oil and other vegetable-based oils. According to JECFA palmitic acid, stearic acid, lauric acid and oleic acid are do not have any safety concerns in the diet[4]. When applied topically fatty acids have been shown to remain mainly on the outer layers of the stratum corneum with little penetration[5]. Therefore, any unreacted fatty acids are not likely to cause systemic toxicity.

The salts of fatty acids are all approved food additives in the US and EU[6,7]. Upon ingestion these sodium salts are expected to dissociate in the gastric tract to fatty acid carboxylates and sodium salts. Sodium stearate has demonstrated the ability to penetrate the skin[7], it is expected that other sodium fatty acid salts may also penetrate the skin.

For the purposes of margin of safety calculations, a group read across assessment of various fatty acid salts was used. The lowest NOAEL was 1000 mg/kg bw/day and should be suitably conservative for margin of exposure calculations.

Summary:

The concentration and use of Sodium Palm Kernelate is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity endpoints such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. Nanoscale Assembly: Chemical Techniques Nanostructure Science and Technology Editor Wilhelm T.S. Huck, Springer Science & Business Media, 2006
2. CIR, Safety Assessment of Plant Derived Fatty Acid Oils, 2017.
3. CIR, Safety Assessment of Fatty Acids & Fatty Acid Salts as Used in Cosmetics, 2019
4. JECFA, WHO Food Additives Series No. 40, 1998.
5. Patzelt, A & Lademann, J & Richter, H & Darvin, Maxim & Schanzer, S & Thiede, Gisela & Sterry, Wolfram & Vergou, Theognosia & Hauser, Matthias. (2011). In vivo investigations on the penetration of various oils and their influence on the skin barrier. Skin research and technology : official journal of International Society for Bioengineering and the Skin (ISBS) [and] International Society for Digital Imaging of Skin (ISDIS) [and] International Society for Skin Imaging (ISSI). 18. 364-9. 10.1111/j.1600-0846.2011.00578.x.
6. 21CFR172.863
7. Re-evaluation of sodium, potassium and calcium salts of fatty acids (E 470a) and magnesium salts of fatty acids (E 470b) as food additives, 2018.

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
Acute oral toxicity	OECD 401	Read across: Calcium stearate. Rat LD_{50}: >2000 mg/kg	Secondary source: Safety Assessment of Fatty Acids & Soaps as Used in Cosmetics Animal test date: Prior to 2013
Acute dermal toxicity	OECD 402	Read across: Lithium stearate. Rat LD_{50}: >2000 mg/kg	Secondary source: Safety Assessment of Fatty Acids & Soaps as Used in Cosmetics Animal test date: Prior to 2013

Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test	OECD 422	Read across: Calcium stearate NOAEL >1000 mg/kg bw/day systemic effects. NOAEL 100 mg/kg bw/day for local effects of ulceration and inflammation of the skin. Lithium stearate >1000 mg/kg bw/day. No reproductive toxicity observed in either study.	Secondary source: Safety Assessment of Fatty Acids & Soaps as Used in Cosmetics Animal test date: Prior to 2013.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Sodium Palmate

CAS number:	61790-79-2	**EC number:**	263-162-3 (I)
INCI Name:	Sodium Palmate		
Pseudonyms:			
Structure:	N/A	**Image:**	N/A

CLP Hazard classification(s):	Not classified
REGULATION (EC) No 1223/2009	Not restricted.
Other regulatory statuses:	N/A

INCI Name	Unscented with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? [illegible]	Skin penetration (%)	Dermal exposure ug/cm2	NESIL	Safety Factor	AEL/CEL	Acceptable Exposure Level ug/cm2
Sodium Palmate	53.7447	61790-79-2	263-162-3	Cleansing, Emulsifying, Surfactant, Viscosity Controlling	N/A	53.74469	0.33789	1000	[illegible]	[illegible]	100	0.798	No Data	300		

Sodium Palmate is the sodium salt of the acids derived from Elaeis Guineensis (Palm) Oil.

It is used as a soap, surfactant and emulsifying agent in cosmetic products. In soap making; oils such as palm oil are saponified with lye (sodium hydroxide) to make the sodium fatty acid salt and glycerin.

The earliest evidence of soap making comes from soap deposits found in Egypt dated to ~2800 BC, inscriptions state the fats were boiled with ashes. There is evidence from 1500 BC that soaps were used for washing and treating skin diseases[1]. Soaps made with vegetable oils or animals fats have a long history of safe use for skin cleansing purposes.

Sodium Palmate is approved as indirect food additive by the USFDA (21CFR175.105, and 21CFR176.170).

Sodium Palmate is used as a surfactant and cleansing agent in cosmetic products. Elaeis Guineensis (Palm) Oil consists of[2]; up to 44% palmitic acid, up to 0.1% % palmitoleic acid, up to 4.5% stearic acid, up to 39.2% oleic acid, up to 10.1% linoleic acid and up to 0.4% linolenic acid. Saponification of olive oil with lye would create sodium palmitate, sodium stearate and their respective sodium salts of the fatty acids. Depending on the superfatting level there may be some unreacted fatty acids.

The CIR review[2] determined that Sodium Laurate/Linoleate/Oleate/Palmitate (major constituents of sodium palmate)[3] is used at up to 84.7% in rinse off products, up to 74.5% in leave on products, up to 74.5% in baby products and up to 84.7% in products applied to the mucous membranes.

Vegetable based fatty acids have a long history of safe use in the diet in edible oils, such as rapeseed oil, palm oil, olive oil and other vegetable-based oils. According to JECFA palmitic acid, stearic acid, lauric acid and oleic acid are do not have any safety concerns in the diet[4]. When applied topically fatty acids have been shown to remain mainly on the outer layers of the stratum corneum with little penetration[5]. Therefore, any unreacted fatty acids are not likely to cause systemic toxicity.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

The salts of fatty acids are all approved food additives in the US and EU[6,7]. Upon ingestion these sodium salts are expected to dissociate in the gastric tract to fatty acid carboxylates and sodium salts. Sodium stearate has demonstrated the ability to penetrate the skin[7], it is expected that other sodium fatty acid salts may also penetrate the skin.

For the purposes of margin of safety calculations, a group read across assessment of various fatty acid salts was used. The lowest NOAEL was 1000 mg/kg bw/day and should be suitably conservative for margin of exposure calculations.

Summary:

The concentration and use of Sodium Palmate is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity endpoints such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. Nanoscale Assembly: Chemical Techniques Nanostructure Science and Technology Editor Wilhelm T.S. Huck, Springer Science & Business Media, 2006
2. CIR, Safety Assessment of Plant Derived Fatty Acid Oils, 2017.
3. CIR, Safety Assessment of Fatty Acids & Fatty Acid Salts as Used in Cosmetics, 2019
4. JECFA, WHO Food Additives Series No. 40, 1998.
5. Patzelt, A & Lademann, J & Richter, H & Darvin, Maxim & Schanzer, S & Thiede, Gisela & Sterry, Wolfram & Vergou, Theognosia & Hauser, Matthias. (2011). In vivo investigations on the penetration of various oils and their influence on the skin barrier. Skin research and technology : official journal of International Society for Bioengineering and the Skin (ISBS) [and] International Society for Digital Imaging of Skin (ISDIS) [and] International Society for Skin Imaging (ISSI). 18. 364-9. 10.1111/j.1600-0846.2011.00578.x.
6. 21CFR172.863
7. Re-evaluation of sodium, potassium and calcium salts of fatty acids (E 470a) and magnesium salts of fatty acids (E 470b) as food additives, 2018.

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

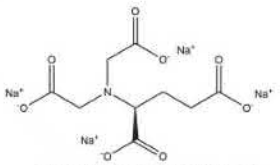
Test type:	Guideline:	Result	Source
Acute oral toxicity	OECD 401	Read across: Calcium stearate. Rat LD_{50}: >2000 mg/kg	Secondary source: Safety Assessment of Fatty Acids & Soaps as Used in Cosmetics Animal test date: Prior to 2013
Acute dermal toxicity	OECD 402	Read across: Lithium stearate. Rat LD_{50}: >2000 mg/kg	Secondary source: Safety Assessment of Fatty Acids & Soaps as Used in Cosmetics Animal test date: Prior to 2013
Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test	OECD 422	Read across: Calcium stearate NOAEL >1000 mg/kg bw/day systemic effects. NOAEL 100 mg/kg bw/day for local effects of ulceration and inflammation of the skin. Lithium stearate >1000 mg/kg bw/day. No reproductive toxicity observed in either study.	Secondary source: Safety Assessment of Fatty Acids & Soaps as Used in Cosmetics Animal test date: Prior to 2013.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

SWIFT FOX
CONSULTING

Ingredient Profile: Tetrasodium Glutamate Diacetate

CAS number:	51981-21-6	**EC number:**	257-573-7
INCI Name:	Tetrasodium Glutamate Diacetate		
Pseudonyms:	Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate		
Structure:	$C_9H_9NO_8Na_4$	**Image:**	



Tetrasodium Glutamate Diacetate

CLP Hazard classification(s):	Not classified
REGULATION (EC) No 1223/2009	Not restricted.
Other regulatory statuses:	N/A

INCI Name	Unneutralised with Shea Butter & Coconut Milk Soap (% w/w)	CAS Number	EC Number	Function(s)	Restrictions	Maximum Level Present in Product(s) (% w/w)	Systemic Exposure Dose (mg/kg bw/day)	Point of Departure (mg/kg bw/day)	Margin of Exposure	Apply skin penetration data? Has read-across analysis been applied and justified?	Skin penetration (%)	Dermal exposure (ug/cm2	NESIL	Safety Factor	AEL/DEL	Acceptable Exposure Level (ug/cm2
Tetrasodium Glutamate Diacetate	0.4773	51981 21 6	257 573 7	Chelating	N/A	0.47731	0.00207	300	145045		100	0.007	No Data	300		

Tetrasodium Glutamate Diacetate is used as a chelating agent in cosmetic products.

Tetrasodium Glutamate Diacetate has low acute oral toxicity. Tetrasodium Glutamate Diacetate is not irritating to the skin or eye in animal models when applied undiluted. Tetrasodium Glutamate Diacetate is not a skin sensitiser in a guinea pig maximisation assay when tested at up to 50% concentrations. Tetrasodium Glutamate Diacetate is not genotoxic *in vitro* or *in vivo*. Tetrasodium Glutamate Diacetate was tested in a 90 oral toxicity test in rats, the NOAEL was 300 mg/kg bw/day.

Summary:

The concentration and use of Tetrasodium Glutamate Diacetate is not restricted according to Regulation (EC) No 1223/2009. The concentration and usage of this ingredient is consistent with industry norms. Under normal conditions of use systemic toxicity is not expected. Local toxicity endpoints such as; skin and eye irritation, skin sensitization, and phototoxicity are not expected.

References:

1. Cosmetic Ingredient Review Expert Panel, Scientific Literature Review for Public Comment, Safety Assessment of Beta-Alanine Diacetic Acid and Tetrasodium Glutamate Diacetateas Used in Cosmetics, 2019.

Specification data:

No specification test data was provided the responsible person must ensure that the ingredient is food or cosmetic grade.

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

Supporting test data:

The data below is based on *in vivo* and *in vitro* data to support the safety assessment. Any animal testing data listed below has been obtained from publicly available literature sources. According to REGULATION (EC) No 1223/2009 and Council Directive 76/768/EEC animal testing is prohibited for cosmetic products and ingredient past the prescribed timescales.

Test type:	Guideline:	Result	Source
Acute oral toxicity	OECD 401	Rat LD_{50}: >5000 mg/kg	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Animal test date: Prior to 1994
Skin irritation	OECD 404	Rabbit: Non irritating at up to 100%	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Animal test date: Prior to 1994
Eye irritation	OECD 405	Rabbit: Non irritating at up to 100%	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Animal test date: Prior to 1994
Skin sensitisation	OECD 406	Not sensitising at up to 50% in guinea pigs	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Animal test date: Prior to 1995
Repeated dose 90-day oral toxicity study in rodents	OECD 408	Rats rat 0, 100, 300 and 1000 mg/kg bw/day. NOAEL 300 mg/kg bw/day	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Animal test date: Prior to 2007
***In vitro* bacterial reverse mutation test**	OECD 471	Not genotoxic 5000 µg/plate ±S9.	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Non animal test data.
***In vivo* mammalian erythrocyte micronucleus test**	OECD 474	Not genotoxic at 400 mg/kg	Secondary source: ECHA Dossier for Tetrasodium N,N-bis(carboxylatomethyl)-L-glutamate Animal test date: Prior to 1995

Swift Fox Consultancy Ltd
36 Northampton Road,
Market Harborough,
Leics,
United Kingdom,
LE16 9HE

Annex II – Fragrance Information

The product contains no essential oils and fragrances.

Annex III

This report is only valid for the formulation(s) submitted herein, should re-formulation occur re-assessment will be necessary.

This report does not cover food imitation, which is prohibited for cosmetic products. This report does not cover medical claims which are prohibited for cosmetic products.

This report covers the Regulation (EC) No. 2009/1223, if the product is marketed in a way is out of scope of the Cosmetic Regulations, for example but not limited to; Biocides (Regulation (EU) No 528/2012), detergents Regulation (EU) 648/2004 or as a toy and relevant safety requirements Regulation (EU) 2009/48/EC The Responsible Person accepts all liability and responsibility for ensuring that their products comply with all of the relevant regulations that apply to their product(s).

The Responsible Person is responsible for ensuring that other elements of the Regulation (EC) No. 2009/1223 such as but not limited to; manufacture to GMP, maintenance/update of the Product Information File, reporting of Serious Undesirable Effects and labelling requirements.

Swift Fox Ltd is not liable for any damage or injury resulting from use of this product.

The validity of the report depends on the disclosure by the manufacturers of the raw materials, packaging and the manufacturer of the finished products.