TECHNICAL REPORT – CPSR REPORT

Report No. **(6625) 286-0290** **Date 2025-10-21**

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Client:	Mid Ocean Brands B.V		
Address:	Unit 711-716, 7/F., Tower A, 83 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong		
Sample name:	Body Mist (1 formulation and additional 2 styles)		
Net weight:	10ml, 30ml, 50ml, 60ml per consumer product		
Style/ Item No.:	MO2904	Country of Origin:	China
Buyer:	/	Expiry Date:	/
Manufacturer:	vendor code: 113285	Date of Receipt:	2025-10-13
Production Date:	/	Assessment Period:	2025-10-13 to 2025-10-16
Sample Source:	/	Appropriate Age Grade:	/
Status of Sample:	/		
Client Specified Age Grade:	/	Tested Age Grade:	/

Test specification:

Cosmetic Product Safety Assessment

Test result*:

Please refer to the assessment based on the EU Cosmetic Regulation (EC) No 1223/2009 issued by Toxicological & Regulatory Assessor.

Note: *: The results were performed at external authorized lab.

Bureau Veritas Testing Technical Service (Zhejiang) Co., Ltd Shanghai Branch

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PART A – Cosmetic product safety information

A.1 Quantitative and qualitative Composition of Products

A.1.1 Nominal Composition

The table below shows the aggregated break-down components of all raw materials from the product. Substances may have more than one function in the product. If so, the main function is given.

INCI Name	CAS No.	EC No.	Conc. (%, w/w), Max.	Function
AQUA	7732-18-5	231-791-2	87.4497	Solvent
BUTYLENE GLYCOL	107-88-0	203-529-7	5.4000	Humectant
GLYCERIN	56-81-5	200-289-5	5.0000	Humectant
PEG-40 HYDROGENATED CASTOR OIL	61788-85-0	/	1.0000	Surfactant - cleansing
PHENOXYETHANOL	122-99-6	204-589-7	0.4500	Preservative
PARFUM (FH20505298)	Mixture	/	0.3000	Perfuming
TOCOPHERYL ACETATE	58-95-7	200-405-4	0.1000	Antioxidant
CHLORPHENESIN	104-29-0	203-192-6	0.1000	Preservative
ALOE BARBADENSIS LEAF EXTRACT	85507-69-3	287-390-8	0.0500	Skin conditioning - emollient
ETHYLHEXYLGLYCERIN	70445-33-9	408-080-2	0.0500	Deodorant
DISODIUM EDTA	139-33-3	205-358-3	0.0500	Viscosity controlling
CENTELLA ASIATICA EXTRACT	84696-21-9	283-640-5	0.0500	Smoothing
Colouring Agent (May Contain)				
CI 19140	1934-21-0	217-699-5	0.0004	Colorant
CI 15850	5858-81-1	227-497-9	0.0003	Colorant
CI 42090	3844-45-9	223-339-8	0.0001	Colorant

FRAGRANCE ALLERGENS

Fragrance allergen **Coumarin, Hexamethylindanopyran, Tetramethyl Acetyloctahydronaphthalenes, Vanillin, Geranyl Acetate** must be declared on the product label in the ingredients section according to EU Cosmetic Regulation.

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

A.2.1 Physical/chemical characteristics of Raw Materials

The raw materials specifications are available upon request.

A.2.2 Physical chemical specifications of the end product

The finished product is liquid in 3 assorted styles (orange, pink, purple).

A.2.3 End product stability

The stability evaluation of the above formula was conducted under different operating conditions in an appropriate packaging at -15°C, -5°C, 25°C, and 40°C for 12 weeks, light exposure for 12 weeks, and cycling test (3 cycle freeze thaw 40°C/RT/4°C) were also conducted. The organoleptic, physico-chemical and microbiological examinations (including appearance, colour, odour, pH value, TVC bacteria, appearance of package) were carried out.

Conclusion: The stability of the formulation is **acceptable** for this application.

A.2.4 Durability (PAO)

It lies with the responsibility of manufacturer or responsible person to determine the product's minimum durability and period-after-opening (PAO) based on the above results from the product stability testing.

A.3 Microbiological quality

A.3.1 The microbiological specifications of the substance or mixture

The microbiological specifications of all raw materials are available upon request.

A.3.2 The microbiological testing results of end product

The microbiological testing results of end product according to European Pharmacopoeia 9.0 2.6.12 & 2.6.13 were listed below.

Items		**Testing Results**	**Unit**
Aerobic mesophilic microorganisms	Aerobic Plate Count	<10	CFU/g
	Yeasts and Moulds	<10	CFU/g
E. Coli, P. aeruginosa, S. aureus, C. albicans, Bile-tolerant gram-negative bacteria, S. typhimurium, C.tetani		Undetected	/g

Conclusion: According to Appendix 9 of the 12th Revision of the NoG (SCCS/1647/22) and ISO 17516:2014, the microbiological quality of this product was considered as **acceptable** for **Category 2 products**.

A.3.3 Results of preservation challenge test

The preservation challenge test result of this formulation according to European Pharmacopoeia 10.0 5.1.3 was listed below.

Microorganisms	**D7**	**D14**	**D28**
	Log reduction values		
Escherichia coli	>5.3	>5.3	>5.3
Staphylococcus aureus	>5.4	>5.4	>5.4
Pseudomonas aeruginosa	>5.0	>5.0	>5.0
Candida albicans	>5.1	>5.1	>5.1
Aspergillus niger	>5.3	>5.3	>5.3

Conclusion: According to EP 10.0 5.1.3 Table 5.1.3.-2 B criteria, the preservation challenge test result of this formulation was considered as **acceptable**.

A.4 Impurities, traces and information about the packaging material

A.4.1 Impurities and Traces of prohibited substances

The potential impurities and traces relevant for the raw materials were controlled via the raw material specifications. And the raw material specifications are available upon request. This product does not contain any relevant impurity at significant levels, and the analytical testing results of heavy metals (below table) indicated the content of As, Hg, Pb, Sb, Cd and Ni (soluble) in this product were undetected and considered to be acceptable according to German Health Authority BgA recommendations form German Health Journal No.28, July 1985 and German Health Journal No.7/1992, Session 45 from November 14,1991. Furthermore, in conformity with the article 3 of the regulation, the safety evaluation of this impurity and trace of prohibited substances is part of the safety evaluation of the cosmetic product.

Items	Testing Results	German Health Authority BgA(Recommendation form German Health Journal No.28, July 1985)	German Health Journal No.7/1992, Session 45 from November 14,1991
Pb, mg/kg	<0.1	≤20	-
Hg, mg/kg	<0.1	≤1	-
As, mg/kg	<0.1	≤5	-
Sb, mg/kg	<0.1	≤10	-
Cd, mg/kg	<0.1	≤5	-
Ni (soluble), mg/kg	<0.1	-	≤10

Conclusion: The heavy metal content of the formulation is **acceptable**.

A.4.2 Information about the Packaging Material

The relevant characteristics of packaging material and in-depth knowledge of its raw materials is based on supplier data. The material information of packaging was listed below.

No.	Part	Material
1	Bottle	PET
2	Cover	PP
3	Nozzle	PP
4	Straws	PE

A.4.3 Chemical purity of the packaging materials

The analytical testing results of immediate container indicated Pb, Cd, Hg and Cr (VI) were undetected with total amount less than 100 ppm.

Conclusion: The chemical purity of the packaging material is acceptable.

A.4.4 Compatibility of package

The compatibility evaluation of the above formula was conducted under different operating conditions in an

appropriate packaging at -15°C, -5°C, 25°C, and 40°C for 12 weeks, light exposure for 12 weeks, and cycling test (3 cycle freeze thaw 40°C/RT/4°C) were also conducted. The organoleptic, physico-chemical and microbiological examinations (including appearance, colour, odour, pH value, TVC bacteria, appearance of package) were carried out.

Conclusion: The overall results of these examinations allow it to be stated that the compatibility tests are **acceptable**.

A.5 Normal and reasonably foreseeable use

The normal use and reasonably foreseeable uses of the product are described for the product type and determine the exposure and hazards used in the safety assessment. Product misuse is not considered.

A.5.1 Normal use and reasonably foreseeable use conditions:

The normal use of this product is intended to be applied as body mist by the population of 3 years old and above. Other usage is not foreseeable.

A.5.2 Warning and other explanation in the product labelling of the product category relevant for safety evaluation.

As the printed instructions of use and warning is clear to describe the product usage and appropriate enough to avoid misuse, no special warnings or instructions of use are further required.

A.6 Exposure to the cosmetic product

The exposure to the cosmetic product is described by the following items:

A.6.1 Product Type

This cosmetic product is applied as body mist

Product Type: Leave-on

A.6.2 Target Group

The target users for this product are: the population of 3 years old and above. And the default body weight use for margin of safety calculation is 15.1 kg.

A.6.3 Area of application

The following exposure areas have been used in the Exposure calculations:

Area of application: whole body skin

Application Surface area: 6200 cm^2(child); 17500 cm^2(adult)

A.6.4 Routes of Exposure

The following exposure routes have been used in the Exposure calculations:

Routes of Exposure: Dermal

A.6.5 Amount per daily application

The following product quantity used per application has been used in the Exposure calculations:

Product Exposure: 0.66 g

A.6.6 Duration and Frequency

The following product use conditions have been used in the Exposure calculations:

Frequency of use: 1-2 times per day

Exposure duration: leave-on

A.7 Exposure to the substances

Exposure to the substances/impurities has been calculated taking into account the potential exposure of product and the concentration of substances/impurities in the product. And exposure to aqua and sea water is not calculated as it is an innocuous and ubiquitous substance.

A.7.1 Exposure to the substance

INCI Name	Inclusion level (% w/w), Max.	Total Systemic (SED) mg/kg bw/day	Local Dermal (CEL) μg/cm²
AQUA	87.4497	38.22426387	92.696682
BUTYLENE GLYCOL	5.4000	2.36034	5.724
GLYCERIN	5.0000	2.1855	5.3
PEG-40 HYDROGENATED CASTOR OIL	1.0000	0.4371	1.06
PHENOXYETHANOL	0.4500	0.196695	0.477
PARFUM (FH20505298)	0.3000	0.13113	0.318
TOCOPHERYL ACETATE	0.1000	0.04371	0.106
CHLORPHENESIN	0.1000	0.04371	0.106
ALOE BARBADENSIS LEAF EXTRACT	0.0500	0.021855	0.053
ETHYLHEXYLGLYCERIN	0.0500	0.021855	0.053
DISODIUM EDTA	0.0500	0.021855	0.053
CENTELLA ASIATICA EXTRACT	0.0500	0.021855	0.053
CI 19140	0.0004	0.00017484	0.000424
CI 15850	0.0003	0.00013113	0.000318
CI 42090	0.0001	0.00004371	0.000106

A.7.2 Exposure to impurities

As there is no impurity at significant levels, there is no exposure calculation.

A.8 Toxicological profile of the substances

Toxicological Profiles are provided for all substances apart from those that are fragrances, regulated ingredients, aqua or substances present at levels below a threshold of toxicological concern.

Accordingly, toxicological profiles of BUTYLENE GLYCOL, GLYCERIN, PEG-40 HYDROGENATED CASTOR OIL, TOCOPHERYL ACETATE, ALOE BARBADENSIS LEAF EXTRACT, ETHYLHEXYLGLYCERIN, DISODIUM EDTA, and CENTELLA ASIATICA EXTRACT are included here.

Toxicological profile of BUTYLENE GLYCOL (CAS No. 107-88-0)

Toxicological endpoints:

Acute toxicity: It was considered to have very low acute toxicity with oral LD_{50} of 23 g/kg bw in rats and dermal LD_{50} > 20000 mg/kg bw in rabbits [1, 2].

Skin irritation: Various data available from humans and animals provide consistent information indicating that butane-1,3 -diol is not or only very slightly irritating to skin and that no classification for this endpoint is required [1, 2].

Eye irritation: It was considered to be at most slightly irritating to eyes [1, 2].

Skin sensitization: Weight of evidence indicated it was not sensitizing to skin [1].

Phototoxicity: No data. But it was considered acceptable as it was demonstrated not to have significant UV absorption capacity.

Repeated dose toxicity: Rats received 1,3-butylene glycol in the diet at levels of 1.0, 3.0, and 10%, for two years (500, 1500 and 5000 mg/kg bw/d). The control group was fed the basal laboratory diet. The changes in body weight, food consumption and pharmacologic effects were recorded regularly. The haematologic, clinical, and examinations at intervals of four months, and microscopic examination of all tissues at one and two years showed no discernable toxic effects in rats at any dietary level. The authors, however, noted that some rats showed signs of chronic inflammation of lungs, spleen, and kidneys, and spontaneous subcutaneous neoplasms in 16 control and 11 test rats. The authors, however, noted that these effects were common in laboratory animals of this strain and age. They concluded that BD was nontoxic in rats up to 10% of the diet. [1]. 1,3-butylene glycol was fed to adult male and female beagles at dietary level of 0, 0.5, 1.0, and 3.0% (0, 125, 250, and 750 mg/kg bw/d) for a period of two years. No treatment related adverse effects were observed and NOAEL was recognized as 750 mg/kg bw/d [1]. In addition, application of 20100 mg/kg bw/d of 1,3-butylene glycol for 2 hrs/day to the intact or scarped skin of guinea pig for 14 or 4 days respectively did not result in any adverse effect [1].

Mutagenicity/Genotoxicity: Weight of evidence indicated it was not genotoxic [1].

Carcinogenicity: No carcinogenic effects were observed in a 2-year feeding study in rats receiving 10% butane-1,3 -diol in food (5000 mg/kg bw/day) and in a 2-year feeding study with dogs, which received 3% butane- 1,3 -diol in food (750 mg/kg bw/day) [1].

Reproductive toxicity: Weight of evidence indicated it was not a specific reproductive or developmental toxicant [1].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	750 mg/kg bw/d
Exposure Estimate	2.36034 mg/kg bw/d
Margin of Safety (MoS)	318

Regulatory Status: Not regulated in Regulation (EC) No 1223/2009 and with the assessment opinion from CIR that it can be safely used in cosmetics at the concentration up to 89% [3].

Conclusion

It is a colourless, viscous liquid, miscible with water and very hygroscopic (it absorbs 38.5 % w/w of water in 144 hours at 81 % relative humidity). It has a boiling point of 207.5 °C, ignition temperature 440 °C (DIN 51794) and a

flash point (open cup) of 121 °C. Due to the adequate margin of safety, hence it can be concluded it is safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of Butane-1,3-diol (CAS No.107-88-0). Last accessed on 2024-09-23@ https://echa.europa.eu/registration-dossier/-/registered-dossier/14962.

[2] CIR Expert Panel.Final Report on the Safety Assessment of Butylene Glycol, Hexylene Glycol, Ethoxydiglycol, and Dipropylene Glycol. JACT 4(5):223-248, 1985.

[3] CIR Expert Panel. Annual Review of Cosmetic Ingredient Safety Assessments—2004/2005. IJT 25(Suppl. 2): 1-89, 2006.

Toxicological profile of GLYCERIN (CAS# 56-81-5)

Toxicological endpoints:

Acute toxicity: Its acute toxicity was practically non-toxic [1, 2].The oral LD_{Lo} of glycerin was reported to be 1428 mg/kg for humans [3].

Skin irritation: It's not considered to be a skin irritant [1].

Eye irritation: It is not considered as an eye irritant [1].

Skin sensitization: Based on the available information, there is no human or animal data that indicates glycerol to be a skin sensitiser.

Phototoxicity: Weight of evidence indicated it was not phototoxic.

Repeated dose toxicity: Repeated oral exposure to glycerin does not induce adverse effects other than local irritation of the gastro-intestinal tract. And in one 2-year chronic diet feeding study in rats, NOAEL was considered as10,000 mg/kg bw/day (20% in diet) [1-3].

Mutagenicity/Genotoxicity: It's not considered to possess genotoxic potential.

Carcinogenicity: Glycerin administered in the feed of rats at concentrations up to 20% for 2 years did not increase the incidence of tumors. Hence, it's considered to be of no concern with regard to carcinogenicity [1-3].

Reproductive toxicity: No effects on fertility and reproductive performance were observed in a two generation reproductive toxicity study with glycerin administered by gavage (NOAEL 2000 mg/kg bw/day) [1-3].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	10000 mg/kg bw/d
Exposure Estimate	2.1855 mg/kg bw/d
Margin of Safety (MoS)	4576

Regulatory Status: Not Regulated in Regulation (EC) No 1223/2009 with the assessment opinion from CIR that it can be safely used in leave-on and rinse-off cosmetics at the concentration up to 79.2% and 99.4% respectively [3]. Glycerin was on the restriction list of Cosmetic Ingredient Hotlist in Canada and Conditions of Use was "Manufacturers of oral and leave-on products containing glycerin must ensure the raw material used is within the specifications of an

accepted pharmacopoeia with respect to diethylene glycol (DEG) impurities (e.g. Glycerin Official Monograph in the most current edition of the USP)".

Conclusion

Glycerin is a clear, syrupy liquid and is naturally occurring in all animals and plant matter in combined form as glycerides in fats and oils, or, in intracellular spaces as lipids. Natural glycerin is obtained as a byproduct in the conversion of fats and oils to fatty acids or fatty acid methyl esters. 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%. Glycerin is considered generally recognized as safe (GRAS) by the FDA for its use in food packaging and it is a multiple-purpose GRAS food substance when used in accordance with good manufacturing practices [21CFR182.90; 21CFR182.1320]. And it is concluded that the currently available data is sufficient to consider it safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of Glycerol (CAS No. 56-81-5). Last accessed on 2024-09-12@https://echa.europa.eu/registration-dossier/-/registered-dossier/14481.
[2] OECD SIDS. INITIAL ASSESSMENT PROFILE of Glycerol. SIAM 14 Paris, France, 26-28 March 2002.
[3] CIR Expert Panel. Safety Assessment of Glycerin as Used in Cosmetics. IJT 38(Suppl. 3): 6-22, 2019.

Toxicological profile of PEG-40 Hydrogenated Castor Oil (CAS No. 61788-85-0)

Toxicological endpoints:

Acute toxicity: Its acute toxicity was very low with oral LD_{50} > 2000 mg/kg bw in rats [1, 2].

Skin irritation: It was considered to be non-irritating to skin [1, 2].

Eye irritation: It was considered to be non-irritating to eyes [1, 2].

Skin sensitization: It was considered to be non-sensitizing based on its large molecular sizeunder current condition of use [1, 2].

Phototoxicity: No data. But it was considered acceptable as it was demonstrated not to have significant UV absorption capacity.

Repeated dose toxicity: In one Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test according to OECD TG 422, oral administration (by gavage) of the substance (Castor oil, hydrogenated, ethoxylated, 1 - 6.5 moles ethoxylated) to Wistar rats at the doses of 100, 300 and 1000 mg/kg/day for two weeks prior to mating and up to the day before sacrifice inclusive (males) or up to days 13-15 of lactation (females) was well tolerated. No test item related mortality was recorded during the study. There were no signs of evident toxicity related to clinical signs, sensory reactivity, grip strength or motor activity. Regarding body weights and food consumption, lower mean values with respect to Control were recorded in males as well as for food consumption

in females. However, given the magnitude observed and the fact that the effect in food consumption was also recorded during pre-test, it needs to be considered as a non-adverse effect. The statistical differences observed in in hematology, coagulation or clinical biochemistry were not considered to be test item related, based on the magnitude and in the absence of a dose relation. These values were within those observed in rats of this strain and age and were there attributed to normal biological variation. There was no indication of an effect of the substance on T4 levels and there was no evidence of a test-item effect in the histopathology performed on F0 adults. There were no changes in the macroscopic examination or organ weights that could be attributable to the substance. Administration of the substance to Wistar rats by oral gavage for 5-8 weeks was not associated with macro/micropathological findings in this study. In the testes, seminiferous tubules were evaluated with respect to their stage in the spermatogenic cycle and the integrity of the various cell types present within the different stages. No cell or stage-specific abnormalities were noted in males treated at 1000 mg/kg. The NOAEL for repeated dose toxicity was considered to be 1000 mg/kg/day for males and females, taking into account the slight decrease in food consumption and body weights. In the testes, seminiferous tubules were evaluated with respect to their stage in the spermatogenic cycle and the integrity of the various cell types present within the different stages. No cell or stage-specific abnormalities were noted in males treated at 1000 mg/kg. Estrous cycles and reproductive parameters of pre-coital interval, mating performance, fertility or gestation length or index were unaffected by treatment. There was no effect on offspring growth. There were no offspring clinical or necropsy signs indicative of a reaction to the substance. Also, there was no effect on litter size, sex ratio, anogenital distance or nipple areolae. At 1000 mg/kg/day, there was a slight reduction in the offspring survival index on lactation day 13 as well as mean body weight in females' offspring was increased on day 4 with respect to Control, that seems to be normalized in time, and consequently not considered to be adverse. The NOAEL for reproductive/developmental toxicity is 1000 mg/kg/day [1].

Mutagenicity/Genotoxicity: It was considered to lack genotoxicity potential [1, 2].

Carcinogenicity: No data. But it was considered acceptable as a stable high molecular weight polymer itself is generally inert because its large size precludes any significant bioavailability [1, 2].

Reproductive toxicity: It was found to lack reproductive toxicity potential in the above-mentioned Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test according to OECD TG 422 [1]. And it was also found to benot teratogenic in the prenatal developmental toxicity study in rats and mice [2].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	1000 mg/kg bw/d
Exposure Estimate	**0.4371** mg/kg bw/d
Margin of Safety (MoS)	**2288**

Regulatory Status: Not regulated in Regulation (EC) No 1223/2009 and with the assessment opinion from CIR that it can be safely used in leave-on and rinse-off cosmetics at the concentration up to 22% and 14% respectively [3].

Conclusion

PEG-40 hydrogenated castor oil is a polyethylene glycol derivative of hydrogenated castor oil with an average of

40 moles of ethylene oxide. PEG-40 hydrogenated castor oil is a mixture of the etherification and esterification products of hydrogenated castor oil glycerides and fatty acids from hydrogenated castor oil, with 40 equivalents of ethylene oxide. Because castor oil is a triglyceride containing approximately 87% ricinoleic acid, 7% oleic acid, 3% linoleic acid, 2% palmitic acid, 1% stearic acid, and a trace of dihydroxysteric acid, PEG Castor Oils are predominantly glyceryl triricinoleyl polyethylene glycol and PEG Hydrogenated Castor Oils are predominantly tri-12-hydroxyl-stearyl polyethylene glycol. PEG-40 hydrogenated castor oil is reported to be a waxy liquid at 30 °C and also has a maximum water content of 0.2%. As a stable high molecular weight polymer itself is generally inert because its large size precludes any significant bioavailability, hence it is concluded that it is sufficient to consider it safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of Castor oil, hydrogenated, ethoxylated (1 - 6.5 moles ethoxylated) (CAS No. 61788-85-0). Last accessed on 2024-09-08@ https://chem.echa.europa.eu/100.105.643/dossier-list/reach/dossiers/active?searchText=61788-85-0.

[2] CIR Expert Panel. FINAL REPORT ON THE SAFETY ASSESSMENT OF PEG-30, -33, -35, -36, AND -40 CASTOR OIL AND PEG-30 AND -40 HYDROGENATED CASTOR OIL. IJT 16(Suppl.3):269-306, 1997.

[3] CIR Expert Panel. Safety Assessment of PEGylated Oils as Used in Cosmetics. IJT 33(Suppl 4):13-39, 2014.

Toxicological profile of TOCOPHERYL ACETATE (CAS# 7695-91-2 / 58-95-7)

Toxicological endpoints:

Acute toxicity: Its acute toxicity was practically non-toxic with oral LD_{50} > 10000 mg/kg bw in rats and dermal LD_{50} > 3000 mg/kg bw in rabbits [1, 2].

Skin irritation:It was found to be not irritating in one primary irritation test in rabbits according to OECD TG 404 [1, 2].

Eye irritation: It was found to be not irritating in one acute eye irritation test in rabbits according to OECD TG 405 [1, 2].

Skin sensitization: Weight of evidence indicated it was not a skin sensitizer [1, 2].

Phototoxicity: Weight of evidence indicated it lacked phototoxicity potential [1, 2].

Repeated dose toxicity: In one subchronic oral toxicity study, the rats were dosed at 125, 500 and 2000 mg/kg. The relative liver weight was significantly increased in high dose females. Administration of 2000 mg/kg bw/d caused hematological changes: prolongation of prothrombin and activated partial thromboblastin (APTT) times and an increase in fibrinogen value, reticulocytosis and a decrease in hematocrit values and hemoglobin concentrations was observed in males; APTT times were also increased in females. Hemorrhagic diathesis was observed in males and females of the high dose group; and increased medullary erythropoiesis was seen in the spleen of one high dose male. The test substance at all dose levels tested caused interstitial inflammation and adenomatous hyperplasia of the

lung. The lung lesions were observed in all vitamin E-treated groups, and the incidence and severity increased in a dose-dependent manner. These lesions were characterized by increased cellularity, vascular congestion, thickened alveolar walls and the presence of foamy macrophages (some of which had undergone cell death and degeneration) in the alveolar spaces. A lipid-like yellow pigmentation was often present within either the macrophages or alveoli. These effects were attributed (as in the other oral gavage 90-day in minipigs study) to local aspiration of the test substance, which would not occur under normal circumstances. Furthermore, these effects were not seen in the chronic feed study (Wheldon, 1978). Therefore, for the NOAEL derivation the effects in the lungs were not considered. Because at 500 mg/kg only APTT values were increased in absence of an increase in PT and fibrinogen value, the NOAEL is set at 500 mg/kg bw/d [1]. In addition, in a 4-month clinical study as well as other well-designed clinical studies conducted in humans with DL-Alpha Tocopheryl acetate. Based on the absence of adverse effects up to the highest dose, the NOAEL was established at a dose of 540 mg alpha-tocopherol equivalents (TE)/day.

Mutagenicity/Genotoxicity: Weight of evidence indicated it lacked genotoxicity potential [2].

Carcinogenicity: Weight of evidence indicated it's unlikely to be carcinogenic [2].

Reproductive toxicity: Weight of evidence indicated it lacked reproductive toxicity potential [1, 2].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	500 mg/kg bw/d
Exposure Estimate	0.04371 mg/kg bw/d
Margin of Safety (MoS)	11439

Regulatory Status: Not Regulated in Regulation (EC) No 1223/2009 with the assessment opinion from SCCNFP that alpha-tocopherol acetate does not pose a threat to the health of the consumer and therefore does not propose any restrictions or conditions on the use of alpha-tocopherol acetate in cosmetic products [3]. CIR also concluded that it can be safely used in leave-on and rinse-off cosmetics at the concentration up to 36% and 10% respectively [2].

Conclusion

It is the acetate ester of tocopherol. It is prepared by esterification of dl-α tocopherol with acetic acid. α-TA is mainly used in cosmetics as humectants, skin protectant or conditioning agent up to concentration of ≤36%. Further, it is functionally used as a nutrient, dietary supplement and antioxidant. α-Tocopherol and α-tocopheryl acetate are GRAS food ingredients when used as a nutrient, and a-tocopherol is GRAS as a chemical preservative in food when used in accordance with good manufacturing practices (21CFR182.8890; 21CFR182.8892; 21CFR182.8390). A group ADI of 0.15-2 mg/kg bw/d for dl-alpha-tocopherol and d-alpha-tocopherol concentrate, singly or in combination was set by JECFA. The tolerable upper intake level (UL) for vitamin E from all dietary sources, which were previously established by the Scientific Committee on Food, are 300 mg/day for adults, including pregnant and lactating women, 100 mg/day for children aged 1–3 years, 120 mg/day for 4–6 years, 160 mg/day for 7–10 years, 220 mg/day for 11–14 years and 260 mg/day for 15–17 years. From the currently available data, it was shown to be of low acute and repeated dose toxicity potential together with low skin/eye irritation and sensitization potential. There is no concern that tocopherols are genotoxic, carcinogenic, or teratogenic. Hence it is concluded that the currently available data is

sufficient to consider it safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of 3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-yl acetate (CAS No. 7695-91-2). Last accessed on 2024-09-12@ https://echa.europa.eu/registration-dossier/-/registered-dossier/13377.

[2] CIR Expert Panel. Safety Assessment of Tocopherols and Tocotrienols as Used in Cosmetics. IJT 37(Suppl. 2): 61-94, 2018.

[3] SCCNFP. THE USE OF ALPHA-TOCOPHEROL ACETATE IN COSMETIC PRODUCTS. SCCNFP/0494/01, final.

Toxicological profile of ALOE BARBADENSIS LEAF EXTRACT (CAS# 85507-69-3/ 94349-62-9)

Toxicological endpoints:

Acute toxicity: Its acute toxicity was assumed to be practically non-toxic as Aloe barbadensis–derived ingredients (also known as Aloe vera) were not toxic in acute oral studies using mice (at doses up to 3 g/kg) [1].

Skin irritation: It was not a skin irritant [2].

Eye irritation: It was not an eye irritant [2].

Skin sensitization: It was assumed to be non-sensitizing as one 0.5% Aloe extract was non-photosensitizing [1] and the content of anthraquinone in this ingredient is below 0.2 ppm from the submitted technical data.

Phototoxicity: No data. But it was considered acceptable as it was demonstrated not to have significant UV absorption capacity.

Repeated dose toxicity: No data. But it was considered acceptable as Aloe barbadensis was the food additives permitted for direct addition to food for human consumption as natural flavoring substances (21CFR 172.510) [1]. In addition, in one 13-week repeated dose oral toxicity study in rats, Qmatrix® (a white to light tan powder derived from mucilaginous parenchymal cells found in the inner central area of the Aloe barbadensis leaf) produced no significant adverse effects and the NOAEL was recognized as 2000 mg/kg bw/d [3].

Mutagenicity/Genotoxicity: No data. But it was considered acceptable as Qmatrix® was non-mutagenic in an Ames test and a chromosomal aberration test at concentrations up to 10,000 μg/plate, and in an in vivo bone marrow micronucleus test at doses up to 5000 mg/kg bw/day [3].

Carcinogenicity: No data. But it was considered acceptable the content of anthraquinone in this ingredient is below 0.2 ppm and recognized to lack genotoxicity potential.

Reproductive toxicity: No data and the observed reproductive/developmental toxicity effects in experimental animals were related with the high concentration of anthraquinone. But this ingredient was considered to lack reproductive toxicity potential as the content of anthraquinone in this ingredient is below 0.2 ppm.

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	2000 mg/kg bw/d

Exposure Estimate	0.021855 mg/kg bw/d
Margin of Safety (MoS)	91512

Regulatory Status: Not regulated in Regulation (EC) No 1223/2009 and with the assessment opinion from CIR that it can be safely used in leave-on cosmetic products at the concentration up to 6% as Aloe extract [1].

Conclusion

Aloe Barbadensis Leaf Extract is an extract of the leaves of the aloe, Aloe barbadensis, Liliaceae. The Aloe Barbadensis plant has a long history of safe use for oral and topical applications. Based on the above information, it is concluded that it is sufficient to consider it safe to be used as intended in this product.

Reference list:

[1] CIR Expert Panel. Final Report on the Safety Assessment of Aloe Andongensis Extract, Aloe Andongensis Leaf Juice, Aloe Arborescens Leaf Extract, Aloe Arborescens Leaf Juice, Aloe Arborescens Leaf Protoplasts, Aloe Barbadensis Flower Extract, Aloe Barbadensis Leaf, Aloe Barbadensis Leaf Extract, Aloe Barbadensis Leaf Juice, Aloe Barbadensis Leaf Polysaccharides, Aloe Barbadensis Leaf Water, Aloe Ferox Leaf Extract, Aloe Ferox Leaf Juice, and Aloe Ferox Leaf Juice Extract. International Journal of Toxicology, 26(Suppl. 2):1–50, 2007.
[2] SDS of this ingredient from the supplier.
[3] Williams LD, et al. Safety studies conducted on a proprietary high-purity aloe vera inner leaf fillet preparation, Qmatrix. Regul Toxicol Pharmacol. 2010, 57(1):90-8.

Toxicological profile of ETHYLHEXYLGLYCERIN (CAS# 70445-33-9)

Toxicological endpoints:

Acute toxicity: Its acute toxicity was very low with both oral LD_{50} and dermal LD_{50} > 2000 mg/kg bw in rats [1].

Skin irritation: It was considered as a mild skin irritant in one primary skin irritation test according to the OECD TG 404 test protocol [1].

Eye irritation: Under the conditions of the in vivo study, it is considered as a severe irritant to the rabbit eye when tested undilutedly [1, 2].

Skin sensitization: In a Guinea Pig Maximisation Test, it was not identified as a skin sensitiser. The sensitization potential of ethylhexylglycerin was not demonstrated in one local lymph node assay at concentrations up to 50% [1, 2].

Phototoxicity: Ethylhexylglycerin was not phototoxic or photoallergic in guinea pigs when tested at concentrations up to 100% in the presence of UV-A/UV-B light [2].

Repeated dose toxicity: Ethylhexylglycerin administered orally to rats, at doses up to 800 mg/kg/d, in a 13-week study did not result in any treatment-related deaths, macroscopic observations, or neurotoxicity. A statistically significant increase in absolute and relative-to-body weight liver weights was observed in males of all dose groups and females of the highest dose group. Generalized hepatocytic hypertrophy was observed at microscopic examination in

the highest dose group, a finding that was statistically significant in males. Two summaries of this 13-week showed that a dose of 50 mg/kg bw/d (lowest dose) was the LOAEL in one summary and the NOAEL in the other summary [1, 2]. And in one Repeated Dose 28-Day Oral Toxicity Study of in Ethylhexylglycerin in rats, increased liver and adrenal weights were observed in the highest dose group, and microscopic findings included slight to moderate liver hypertrophy in rats of all 3 dose groups. The NOAEL was recognized as 100 mg/kg bw/d [1, 2].

Mutagenicity/Genotoxicity: Ethylhexylglycerin was nongenotoxic in the Ames test (S typhimurium strains) and in the mouse lymphoma assay in vitro, both with and without metabolic activation. It was also nonclastogenic in the micronucleus assay in vivo [1, 2].

Carcinogenicity: No data, but it is not expected to be a carcinogen as no structural alerts were found in the computational toxicology software DEREK for its carcinogenicity and no genotoxicity hazards are recognized.

Reproductive toxicity: It was not found to be a reproductive or developmental toxicant, based on a prenatal developmental study and a one generation Reproduction Toxicity study in rats [1].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	50 mg/kg bw/d
Exposure Estimate	0.021855 mg/kg bw/d
Margin of Safety (MoS)	2288

Regulatory Status: Not Regulated in Regulation (EC) No 1223/2009 and with the assessment opinion CIR also concluded it can be safely used in leave-on and rinse-off cosmetics at the concentration up to 2% and 8% respectively [2].

Conclusion

Ethylhexylglycerin (EHG) is an alkyl glyceryl ether that acts as a surfactant or skin conditioning agent in cosmetic products. It reportedly also inhibits the growth and multiplication of odor-causing bacteria and enhances the efficacy of cosmetic preservatives, such as phenoxyethanol, methylisothiazolinone, or methylparaben. And it is concluded that the currently available data is sufficient to consider it safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of 3-(2-ethylhexyloxy)propane-1,2-diol (CAS No. 70445-33-9). Last accessed on 2024-09-10@https://echa.europa.eu/registration-dossier/-/registered-dossier/16725.

[2] CIR Expert Panel. Safety Assessment of Alkyl Glyceryl Ethers as Used in Cosmetics. IJT 32(Suppl. 3): 5-21, 2013.

Toxicological profile of Disodium EDTA (CAS# 139-33-3; 6381-92-6)

Toxicological endpoints:

Acute toxicity: Its acute oral toxicity was assumed to be very low with oral LD_{50} of 2800 mg/kg bw in rats [1].

Skin irritation: It was considered as a skin irritant in one acute irritation test in rabbits [1,2].

Eye irritation: It is practically non-irritating to rabbit eyes according to Draize test [1,2].

Skin sensitization: It was not skin sensitizing in one guinea pig maximisation test [1, 2].

Phototoxicity: Weight of evidence indicated it was not phototoxic as it was demonstrated not to have significant UV absorption capacity.

Repeated dose toxicity: In a 13-week repeated-dose toxicity study, rats (both sexes) fed Na_2EDTA (0, 1, 5, 10%) showed mortality at the highest dose. In addition, there was decreased food consumption (emaciation at 10%) and diarrhea at doses of 5% (approximately 4206 mg/kg bw/day) and above. The NOAEL was 1% (approximately 500 mg/kg bw/day) [1].

Mutagenicity/Genotoxicity: Weight of evidence indicated it lacked mutagenicity potential [1-3].

Carcinogenicity: Weight of evidence indicated it lacked carcinogenicity potential [1-3].

Reproductive toxicity: Weight of evidence indicated it would not be expected to exhibit reproductive and developmental toxicity effects in the absence of a metal deficiency which is not expected under normal nutrition [1-3].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	500 mg/kg bw/d
Exposure Estimate	0.021855 mg/kg bw/d
Margin of Safety (MoS)	22878

Regulatory Status: Not regulated in Regulation (EC) No 1223/2009 and with the assessment opinion from CIR that it can be safely used in leave-on and rinse-off cosmetics at the concentration up to 0.85% and 3% respectively [4].

Conclusion

The use of EDTA and its salts as stabilizing and chelating agents has been described as "ubiquitous". It was the authorised food additive with ADI of 2.5 mg/kg bw/d established by JECFA. Due to the adequate margin of safety, hence it can be concluded it is safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of Disodium dihydrogen ethylenediaminetetraacetate (CAS No. 139-33-3). Last accessed on 2023-08-16@https://echa.europa.eu/registration-dossier/-/registered-dossier/14817.

[2] CIR Expert Panel. Final Report on the Safety Assessment of EDTA, Calcium Disodium EDTA, Diammonium EDTA, Dipotassium EDTA, Disodium EDTA, TEA-EDTA, Tetrasodium EDTA, Tripotassium EDTA, Trisodium EDTA, HEDTA, and Trisodium HEDTA. IJT 21(Suppl.2):95-142, 2002.

[3] IPCS. https://www.inchem.org/documents/jecfa/jecmono/v05je25.htm.

[4] CIR Expert Panel.EDTA and Salts. IJT 42(Suppl. 3):32-36, 2023.

Toxicological profile of CENTELLA ASIATICA EXTRACT (CAS# 84696-21-9)

Toxicological endpoints:

Acute toxicity: It is of low acute oral and dermal toxicity. The experimental LD_{50} are > 2000 mg/kg bw for both

routes of exposure in rats [1].

Skin irritation: Not expected to be a skin irritant in one in vitro skin irritation test with the reconstituted three-dimensional human model EPISKIN-DM TM (SkinEthic) [1].

Eye irritation: It was considered to be irritating to eyes based on one BCOP assay and one in vitro eye irritation test with Human Corneal Epithelium model (HCE) [1].

Skin sensitization: It was found to lack skin sensitization potential in the Buehler test [2].

Phototoxicity: No data. But it was considered acceptable as it was demonstrated not to have significant UV absorption capacity.

Repeated dose toxicity: In one 28-day Repeated Dose Oral Toxicity study with Centella asiatica dry ext. in male and female Wistar rats, the test item Centella asiatica dry ext. did not cause indicators of toxicity under the conditions of this study. No adverse effects of the test item were found at all tested dose levels. The NOAEL may be established at 1000 mg/kg bw/d [1].

Mutagenicity/Genotoxicity: It was considered to lack genotoxicity potential based on the weight of evidence from the in vitro and in vivo genotoxicity testing results [1].

Carcinogenicity: No data. But it was considered acceptable as it was considered to lack genotoxicity potential and had long history safe use in cosmetics and dermally administered drugs.

Reproductive toxicity: In one study performed to evaluate the effects of centella asiatica extract (ethanol extract) on the rat testis via oral administration for 42 consecutive days, it was found to be a reproductive toxicant in male rats and the NOAEL can be recognized as 100 mg/kg bw/d [2].

Critical Point of Departure Value for MoS calculation

Critical Point of Departure Value	1000 mg/kg bw/d
Exposure Estimate	0.021855 mg/kg bw/d
Margin of Safety (MoS)	45756

Regulatory Status: Not regulated in Regulation (EC) No 1223/2009 and with the assessment opinion from CIR that it can safely be used in leave-on cosmetics at the concentration up to 0.5% when formulated to be non-sensitizing.

Conclusion

Centella Asiatica Extract is the extract of the whole plant Hydrocotyl, Centella asiatica L., Apiaceae. Due to the adequate margin of safety, hence it can be concluded it is safe to be used as intended in this product.

Reference list:

[1] ECHA. Registration dossier of Hydrocotyle asiatica, ext. (CAS No. 84696-21-9). Last accessed on 2023-06-05@ https://echa.europa.eu/registration-dossier/-/registered-dossier/23171.

[2] CIR Expert Panel. 2015. Safety Assessment of Centella asiatica-derived Ingredients as Used in Cosmetics.

A.9 Undesirable effects and serious undesirable effects

As at the date of this report the product has not yet been commercialized, therefore there are no data available from post marketing surveillance on undesirable effects or serious undesirable effects to the cosmetic product.

No relevant data on other cosmetic product are available.

A.10 Information on the Cosmetic Product

No other relevant information was submitted.

PART B – Cosmetic Product Safety Assessment

B.1 Assessment conclusion

The formulation does not contain forbidden or banned ingredients per European Cosmetics Regulation (EC) No 1223/2009 and its amendments, and the safety assessment has been carried out in accordance with this regulation and its subsequent amendments.

After overall evaluation, this product can be considered as safe to be placed on the market without posing a foreseeable risk to the health of consumers under normal or reasonably foreseeable conditions of use.

B.2 Labelled warnings and instructions of use

As the printed instructions of use and warning is clear to describe the product usage and appropriate enough to avoid misuse, no special warnings or instructions of use are further required.

B.3 Reasoning

B.3.1 Safety Evaluation of the Substances

All of the following ingredients have been assessed as safe for human health under normal and reasonably foreseeable conditions of use.

Substance Name	Conc. (% w/w), Max.	Max. allowed conc. (%)	Margin of Safety	Assessment Conclusion
BUTYLENE GLYCOL	5.4000	NA	318	Safe for human health under normal and reasonably foreseeable conditions of use.
GLYCERIN	5.0000	NA	4576	Safe for human health under normal and reasonably foreseeable conditions of use.
PEG-40 HYDROGENATED CASTOR OIL	1.0000	NA	2288	Safe for human health under normal and reasonably foreseeable conditions of use.
PHENOXYETHANOL	0.4500	1	NA	Conforms to regulated usage.
PARFUM (FH20505298)	0.3000	33.08	NA	conforms to IFRA standards
TOCOPHERYL ACETATE	0.1000	NA	11439	Safe for human health under normal and reasonably foreseeable conditions of use.
CHLORPHENESIN	0.1000	0.3	NA	Conforms to regulated usage.
ALOE BARBADENSIS LEAF EXTRACT	0.0500	NA	91512	Safe for human health under normal and reasonably foreseeable conditions of use.
ETHYLHEXYLGLYCERIN	0.0500	NA	2288	Safe for human health under normal and reasonably foreseeable conditions of use.
DISODIUM EDTA	0.0500	NA	22878	Safe for human health under normal and reasonably foreseeable conditions of use.

CENTELLA ASIATICA EXTRACT	0.0500	NA	45756	Safe for human health under normal and reasonably foreseeable conditions of use.
CI 19140	0.0004	NA	NA	Conforms to regulated usage.
CI 15850	0.0003	NA	NA	Conforms to regulated usage.
CI 42090	0.0001	NA	NA	Conforms to regulated usage.

B.3.2 Safety Evaluation of the Product

This product along with all substances contained within the formulation of the product has been evaluated and found to be safe for its normal and reasonably foreseeable use based on submitted product information and other information publicly available.

The product will be produced with certified Good Manufacturing Practices for cosmetics. And the stability, microbiological quality, packaging, warnings and use instructions have been considered and taken into account as part of safety evaluation of this product. These aspects are covered under Sections A2, A3, A4 & A5 of the report.

Based upon the information supplied, unless otherwise stated in this report, it was assumed that neither this product, nor the ingredients used in the product, contained any impurities/contaminants that would cause harm to the health of a consumer. And this evaluation result is valid only to the conditions described herein. And any deviation from the above disclosed conditions will necessitate a new evaluation. Furthermore, if any serious undesirable effects attributed to the use of this product occurred, the safety assessor shall be informed immediately. Under such circumstances, a new safety assessment will be conducted, and conclusions may be revised.

B.4 Assessor´s credentials and approval of part B

Dr. Raul Xin, EUROTOX Registered Toxicologist (ERT)

Authorized external expert of Bureau Veritas

*** End of Report ***