
Safety Assessment of PEG Stearates as Used in Cosmetics

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PEG STEARATES

The Expert Panel for Cosmetic Ingredient Safety (Panel) first published the Final Report on the Safety Assessment of PEG-2, -6, -8, -12, -20, -32, -40, -50, -100, and -150 Stearates in 1983.¹ The Panel concluded, on the basis of the available information presented in the report, that these 10 PEG Stearates are safe as cosmetic ingredients in the present practices of concentration and use. Upon re-review in November 2002, the Panel reaffirmed the original conclusion and included 20 additional PEG Stearates in this group, as published in 2005.²

Because it has been at least 15 years since the prior re-review was published, in accordance with Cosmetic Ingredient Review (CIR) Procedures, the Panel again determined whether the safety assessment should be reopened. At the September 2024 meeting, the Panel considered updated (2023) information regarding product types and ingredient use frequencies as reported in the US Food and Drug Administration (FDA) Voluntary Cosmetic Registration Program (VCRP) database³ and maximum use concentrations provided in response to the survey conducted by the Personal Care Products Council.⁴ Reported frequency and concentrations of use mostly decreased or remained constant for these ingredients, with a few exceptions. Frequency of use increased notably for PEG-75 (97 uses reported in 2023 compared to 6 uses in 2002) and PEG-100 Stearate (1844 uses reported in 2023 compared to 424 uses in 2002). The maximum reported concentration of use increased for PEG-20 Stearate, from 4% (in body and hand and in moisturizing products) in 2002 to 10.1% (in tonics, dressings, and other hair grooming aids) in 2023. New uses were reported in baby products for some ingredients. The cumulative frequency and concentration of use data are presented in Table 1.

In August 2024, an extensive search of the world's literature was performed for studies dated 2000 forward, and new data were found.⁵⁻⁷ These data included non-cosmetic uses for multiple PEG Stearates, an in vitro study evaluating the effect of PEG-8, -12, and -40 Stearate on penetration enhancement, and an in vitro ocular irritation study on PEG-2 Stearate.

In summary, the Panel reviewed 2023 frequency and concentration of use data and new, available, relevant safety data. Considering this information, as well as the information provided in the original safety assessment and the prior re-review document, the Panel reaffirmed the 1983 conclusion. The Panel discussed the possibility for these ingredients to be used in cosmetic products which may be incidentally inhaled. A detailed discussion and summary of the Panel's approach to evaluating incidental inhalation exposures to ingredients in cosmetic products is available at <https://www.cir-safety.org/cir-findings>.)

[illegible]

Table 1. Frequency (2023/2002) and concentration (2023/2002) of use of PEG Stearates according to likely duration and exposure and by product category

	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Hair Coloring Preparations																
Hair Dyes and Colors (all types requiring caution statements and patch tests)																
Hair Tints																
Hair Color Sprays (aerosol)																
Hair Lighteners with Color																
Hair Bleaches																
Other Hair Coloring Preparation									NR	1	NR	NR				
Makeup Preparations																
Blushers (all types)																
Face Powders																
Foundations	NR	4	NR	0.2 - 1					NR	1	NR	NR	NR	1	NR	NR
Lipstick	5	NR	NR	NR												
Makeup Bases	NR	1	NR	NR												
Rouges																
Makeup Fixatives																
Other Makeup Preparations	NR	NR	NR	2												
Manicuring Preparations (Nail)																
Cuticle Softeners																
Nail Creams and Lotions																
Other Manicuring Preparations																
Personal Cleanliness Products																
Bath Soaps and Detergents																
Deodorants (underarm)																
Other Personal Cleanliness Products																
Shaving Preparations																
Aftershave Lotion	NR	3	NR	0.4												
Beard Softeners																
Shaving Cream																
Other Shaving Preparations	NR	NR	0.11	NR												
Skin Care Preparations																
Cleansing	NR	6	NR	2					1	1	NR	NR	NR	2	NR	NR
Depilatories																
Face and Neck (exc shave)	NR	1	not spray: 1.5	NR					3	NR	NR	3	NR	1	NR	NR
Body and Hand (exc shave)	8	7	NR	NR	NR	5	NR	NR	2	2	NR	NR	NR	1	NR	NR
Foot Powders and Sprays																
Moisturizing	10	13	NR	NR					1	3	NR	6	NR	6	NR	NR
Night	NR	9	NR	NR					1	3	NR	NR	NR	2	NR	NR
Paste Masks (mud packs)	NR	4	NR	NR	NR	1	NR	NR	NR	1	NR	2 - 3				
Skin Fresheners																
Other Skin Care Preparations	NR	8	NR	NR	NR	2	NR	NR	2	8	NR	NR	NR	5	NR	NR
Suntan Preparations																
Suntan Gels, Creams, and Liquids	NR	2	NR	2									NR	11	NR	NR
Indoor Tanning Preparations	NR	1	NR	1									NR	4	NR	NR
Other Suntan Preparations	NR	1	NR	NR									NR	1	NR	NR

	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
	PEG-8 Stearate				PEG-10 Stearate				PEG-12 Stearate				PEG-20 Stearate			
Totals*	17	18	0.49 – 4	0.5 – 3	NR	3	NR	NR	NR	19	1.2 – 1.8	NR	40	42	0.1 – 10.1	0.2 – 4
summarized by likely duration and exposure**																
Duration of Use																
Leave-On	16	12	0.49 – 4	0.5 – 3	NR	NR	NR	NR	NR	6	1.8	NR	33	25	0.1 – 10.1	0.2 – 4
Rinse-Off	1	6	2	2	NR	3	NR	NR	NR	13	1.2	NR	6	16	0.1 – 0.45	2
Diluted for (Bath) Use	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	1	NR	NR
Exposure Type																
Eye Area	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	2	1	NR	NR
Incidental Ingestion	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Incidental Inhalation-Spray	7 ^a ; 7 ^b	6 ^a ; 2 ^b	0.5 ^a	3 ^a ; 0.5 ^b	NR	NR	NR	NR	NR	1 ^a ; 5 ^b	NR	NR	16 ^a ; 9 ^b	2; 13 ^a ; 8 ^b	1.2; 0.1 – 10.1 ^a	3 – 4 ^a ; 0.2 – 4 ^b
Incidental Inhalation-Powder	7 ^b	2 ^b	1.1 – 3 ^c	0.5 ^b	NR	NR	NR	NR	NR	5 ^b	NR	NR	9 ^b	8 ^b	1.1; 2.3 ^c	0.2 – 4 ^b
Dermal Contact	16	14	0.49 – 4	0.5 – 3	NR	1	NR	NR	NR	19	1.2 – 1.8	NR	35	40	1.1 – 2.3	0.2 – 4
Deodorant (underarm)	NR	NR	0.49	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hair - Non-Coloring	1	3	0.5 – 2	NR	NR	2	NR	NR	NR	NR	NR	NR	4	2	0.1 – 10.1	NR
Hair-Coloring	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	NR	NR	NR
Mucous Membrane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	4	NR	NR
Baby Products	NR	NR	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
as reported by product category																
Baby Products																
Baby Shampoos																
Baby Lotions/Oils/Powders/Creams	NR	NR	3	NR												
Other Baby Products																
Bath Preparations (diluted for use)																
Bubble Baths																
Other Bath Preparations													1	1	NR	NR
Eye Makeup Preparations																

	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
	PEG-8 Stearate				PEG-10 Stearate				PEG-12 Stearate				PEG-20 Stearate			
Totals*	17	18	0.49 – 4	0.5 – 3	NR	3	NR	NR	NR	19	1.2 – 1.8	NR	40	42	0.1 – 10.1	0.2 – 4
summarized by likely duration and exposure**																
Duration of Use																
Leave-On	16	12	0.49 – 4	0.5 – 3	NR	NR	NR	NR	NR	6	1.8	NR	33	25	0.1 – 10.1	0.2 – 4
Rinse-Off	1	6	2	2	NR	3	NR	NR	NR	13	1.2	NR	6	16	0.1 – 0.45	2
Diluted for (Bath) Use	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	1	NR	NR
Exposure Type																
Eye Area	NR	1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	2	1	NR	NR
Incidental Ingestion	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Incidental Inhalation-Spray	7 ^a ; 7 ^b	6 ^a ; 2 ^b	0.5 ^a	3 ^a ; 0.5 ^b	NR	NR	NR	NR	NR	1 ^a ; 5 ^b	NR	NR	16 ^a ; 9 ^b	2; 13 ^a ; 8 ^b	1.2; 0.1 – 10.1 ^a	3 – 4 ^a ; 0.2 – 4 ^b
Incidental Inhalation-Powder	7 ^b	2 ^b	1.1 – 3 ^c	0.5 ^b	NR	NR	NR	NR	NR	5 ^b	NR	NR	9 ^b	8 ^b	1.1; 2.3 ^c	0.2 – 4 ^b
Dermal Contact	16	14	0.49 – 4	0.5 – 3	NR	1	NR	NR	NR	19	1.2 – 1.8	NR	35	40	1.1 – 2.3	0.2 – 4
Deodorant (underarm)	NR	NR	0.49	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hair - Non-Coloring	1	3	0.5 – 2	NR	NR	2	NR	NR	NR	NR	NR	NR	4	2	0.1 – 10.1	NR
Hair-Coloring	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nail	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	NR	NR	NR
Mucous Membrane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1	4	NR	NR
Baby Products	NR	NR	3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
as reported by product category																
Baby Products																
Baby Shampoos																
Baby Lotions/Oils/Powders/Creams	NR	NR	3	NR												
Other Baby Products																
Bath Preparations (diluted for use)																
Bubble Baths																
Other Bath Preparations													1	1	NR	NR
Eye Makeup Preparations																
Eyebrow Pencil																
Eyeliner																
Eye Shadow																
Eye Lotion													1	NR	NR	NR
Eye Makeup Remover													NR	1	NR	NR
Mascara	NR	1	NR	NR												
Other Eye Makeup Preparations													1	NR	NR	NR
Fragrance Preparations																
Cologne and Toilet Water																
Perfumes																
Sachets																
Other Fragrance Preparations													NR	2	1.2	NR
Hair Preparations (non-coloring)																
Hair Conditioner	NR	3	2	NR									2	2	0.1 – 0.45	NR
Hair Straighteners																
Rinses (non-coloring)																
Shampoos (non-coloring)					NR	2	NR	NR								
Tonics, Dressings, and Other Hair Grooming Aids	NR	NR	0.5	NR									1	NR	0.1 – 10.1	NR
Other Hair Preparations	1	NR	NR	NR									1	NR	NR	NR

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	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Hair Coloring Preparations																
Hair Dyes and Colors (all types requiring caution statements and patch tests)																
Hair Tints																
Hair Color Sprays (aerosol)																
Hair Lighteners with Color																
Hair Bleaches																
Other Hair Coloring Preparations																
Makeup Preparations																
Blushers (all types)																
Face Powders													NR	NR	1.1	NR
Foundations	NR	1	NR	NR									NR	1	NR	NR
Lipstick																
Makeup Bases																
Rouges																
Makeup Fixatives																
Other Makeup Preparations	NR	1	NR	NR									1	NR	NR	NR
Manicuring Preparations (Nail)																
Cuticle Softeners													1	NR	NR	NR
Nail Creams and Lotions																
Other Manicuring Preparations																
Personal Cleanliness Products																
Bath Soaps and Detergents																
Deodorants (underarm)	NR	NR	not spray: 0.49	NR												
Other Personal Cleanliness Products													NR	3	NR	NR
Shaving Preparations																
Aftershave Lotion													NR	1	NR	NR
Beard Softeners																
Shaving Cream	1	1	NR	NR					NR	12	NR	NR				
Other Shaving Preparations													NR	1	NR	NR
Skin Care Preparations																
Cleansing	NR	1	NR	2	NR	1	NR	NR	NR	1	NR	NR	2	6	NR	2
Depilatories	NR	1	NR	NR									1	NR	NR	NR
Face and Neck (exc shave)	1	NR	NR	0.5					NR	2	NR	NR	5	2	NR	0.5 – 2
Body and Hand (exc shave)	6	2	not spray: 1.1	NR					NR	3	NR	NR	4	6	not spray: 2.3	0.2 – 4
Foot Powders and Sprays																
Moisturizing	7	5	not spray: 1.4 – 4	3									13	8	NR	4
Night													2	1	NR	3
Paste Masks (mud packs)									NR	NR	1.2	NR	1	3	NR	NR
Skin Fresheners																
Other Skin Care Preparations	1	1	NR	NR									3	NR	NR	NR
Suntan Preparations																
Suntan Gels, Creams, and Liquids	NR	1	NR	NR					NR	1	not spray: 1.8	NR	NR	4	NR	NR
Indoor Tanning Preparations																

[illegible][illegible]

Table 1. Frequency (2023/2002) and concentration (2023/2002) of use of PEG Stearates according to likely duration and exposure and by product category

	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Hair Coloring Preparations																
Hair Dyes and Colors (all types requiring caution statements and patch tests)													NR	NR	0.9	NR
Hair Tints																
Hair Color Sprays (aerosol)																
Hair Lighteners with Color													NR	NR	NR	0.07
Hair Bleaches													NR	1	0.6	NR
Other Hair Coloring Preparation													NR	1	NR	NR
Makeup Preparations																
Blushers (all types)													NR	NR	NR	2
Face Powders																
Foundations													NR	6	0.5	2 – 3
Lipstick													6	NR	2	2
Makeup Bases													NR	1	NR	2 – 3
Rouges																
Makeup Fixatives																
Other Makeup Preparations													NR	1	NR	3
Manicuring Preparations (Nail)																
Cuticle Softeners																
Nail Creams and Lotions																
Other Manicuring Preparations													NR	1	NR	3
Personal Cleanliness Products																
Bath Soaps and Detergents													NR	1	4	0.01
Deodorants (underarm)													NR	NR	NR	3
Other Personal Cleanliness Products									NR	1	NR	NR	NR	3	NR	NR
Shaving Preparations																
Aftershave Lotion													NR	15	3	NR
Beard Softeners																
Shaving Cream													NR	1	NR	NR
Other Shaving Preparations									NR	1	NR	NR	NR	2	3	3
Skin Care Preparations																
Cleansing									1	1	1	1	4	9	1 – 2.5	0.8 – 7
Depilatories																
Face and Neck (exc shave)									1	NR	NR	3	23	8	not spray: 0.079 – 2.6	0.8 – 3
Body and Hand (exc shave)									1	1	1	2	36	27	not spray: 0.5 – 3	0.8 – 5
Foot Powders and Sprays									NR	NR	1	NR	NR	1	NR	NR
Moisturizing	2	NR	NR	NR	3	1	NR	NR	NR	5	NR	6	32	34	not spray: 0.033 – 1.6	2 – 3
Night					NR	1	NR	NR	1	NR	1	NR	2	6	not spray: 0.75	2 – 3
Paste Masks (mud packs)									NR	1	NR	3	2	7	2.5	0.8
Skin Fresheners					1	NR	NR	NR								
Other Skin Care Preparations					5	NR	NR	NR	NR	1	NR	NR	4	15	2.8	1 – 2
Suntan Preparations																
Suntan Gels, Creams, and Liquids													NR	1	NR	0.5 – 2
Indoor Tanning Preparations													NR	3	2.4	2
Other Suntan Preparations													NR	1	2	2

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	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
	PEG-45 Stearate				PEG-50 Stearate				PEG-55 Stearate				PEG-75 Stearate			
Totals*	3	NR	3.2	NR	NR	11	8.5	9	4	1	2.3	NR	97	6	0.15 – 1.2	NR
summarized by likely duration and exposure**																
Duration of Use																
Leave-On	3	NR	3.2	NR	NR	11	8.5	9	2	1	2.3	NR	92	6	0.15 – 1.2	NR
Rinse-Off	NR	NR	NR	NR	NR	NR	NR	NR	2	NR	NR	NR	5	NR	0.3 – 0.68	NR
Diluted for (Bath) Use	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Exposure Type																
Eye Area	3	NR	3.2	NR	NR	NR	NR	NR	NR	1	NR	NR	3	NR	0.6 – 1	NR
Incidental Ingestion	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Incidental Inhalation-Spray	NR	NR	NR	NR	NR	9 ^a ; 1 ^b	NR	NR	2 ^b	NR	NR	NR	58 ^a ; 21 ^b	3 ^a ; 3 ^b	NR	NR
Incidental Inhalation-Powder	NR	NR	NR	NR	NR	1 ^b	NR	NR	2 ^b	NR	NR	NR	21 ^b	3 ^b	0.15 – 1.2 ^c	NR
Dermal Contact	3	NR	NR	NR	NR	11	NR	NR	2	1	2.3	NR	95	NR	0.15 – 1.2	NR
Deodorant (underarm)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	6	1.2	NR
Hair - Non-Coloring	NR	NR	NR	NR	NR	NR	NR	NR	2	NR	NR	NR	2	NR	0.15	NR
Hair-Coloring	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nail	NR	NR	NR	NR	NR	NR	8.5	9	NR	NR	NR	NR	NR	NR	NR	NR
Mucous Membrane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Baby Products	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.5 – 0.75	NR
as reported by product category																
Baby Products																
Baby Shampoos																
Baby Lotions/Oils/Powders/Creams													NR	NR	0.5 – 0.75	NR
Other Baby Products																
Bath Preparations (diluted for use)																
Bubble Baths																
Other Bath Preparations																
Eye Makeup Preparations																
Eyebrow Pencil																
Eyeliner	3	NR	NR	NR					NR	1	NR	NR				
Eye Shadow																
Eye Lotion													3	NR	0.6 – 1	NR
Eye Makeup Remover																
Mascara	NR	NR	3.2	NR												
Other Eye Makeup Preparations																
Fragrance Preparations																
Cologne and Toilet Water																
Perfumes																
Sachets																
Other Fragrance Preparation																
Hair Preparations (non-coloring)																
Hair Conditioner																
Hair Straighteners																
Rinses (non-coloring)																
Shampoos (non-coloring)									2	NR	NR	NR				
Tonics, Dressings, and Other Hair Grooming Aids																
Other Hair Preparations													2	NR	0.15	NR

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	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Hair Coloring Preparations																
Hair Dyes and Colors (all types requiring caution statements and patch tests)																
Hair Tints																
Hair Color Sprays (aerosol)																
Hair Lighteners with Color																
Hair Bleaches																
Other Hair Coloring Preparation																
Makeup Preparations																
Blushers (all types)													2	NR	NR	NR
Face Powders													NR	NR	0.68	NR
Foundations																
Lipstick																
Makeup Bases																
Rouges																
Makeup Fixatives																
Other Makeup Preparations																
Manicuring Preparations (Nail)																
Cuticle Softeners																
Nail Creams and Lotions																
Other Manicuring Preparations					NR	NR	8.5	9								
Personal Cleanliness Products																
Bath Soaps and Detergents																
Deodorants (underarm)													NR	NR	not spray: 1.2	NR
Other Personal Cleanliness Products																
Shaving Preparations																
Aftershave Lotion					NR	1	NR	NR								
Beard Softeners																
Shaving Cream																
Other Shaving Preparations																
Skin Care Preparations																
Cleansing													1	NR	0.3 – 0.68	NR
Depilatories																
Face and Neck (exc shave)					NR	1	NR	NR					15	2	not spray: 0.45 – 1.2 spray: 0.38	NR
Body and Hand (exc shave)									2	NR	NR	NR	6	1	not spray: 0.15 – 0.9	NR
Foot Powders and Sprays																
Moisturizing					NR	8	NR	NR					50	1	not spray: 0.28 – 0.75	NR
Night					NR	1	NR	NR					8	1	NR	NR
Paste Masks (mud packs)													4	NR	0.45 – 0.5	NR
Skin Fresheners																
Other Skin Care Preparations													6	1	0.24 – 0.27	NR
Suntan Preparations																
Suntan Gels, Creams, and Liquids									NR	NR	not spray: 2.3	NR	NR	NR	not spray: 0.45	NR
Indoor Tanning Preparations																

Table 1. Frequency (2023/2002) and concentration (2023/2002) of use of PEG Stearates according to likely duration and exposure and by product category

	# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)		# of Uses		Max Conc of Use (%)	
	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Other Suntan Preparations																
	PEG-90 Stearate				PEG-100 Stearate				PEG-150 Stearate							
	2023 ⁸	2002 ⁹	2023 ¹⁰	2002 ⁹	2023 ⁸	2002 ⁹	2023 ¹⁰	2002 ⁹	2023 ⁸	2002 ⁹	2023 ¹⁰	2002 ⁹				
Totals*	NR	1	NR	NR	1844	424	0.00033 - 6	0.01 - 25	NR	23	0.088 - 6	0.2 - 6				
summarized by likely duration and exposure**																
Duration of Use																
Leave-On	NR	NR	NR	NR	1675	299	0.0075 - 6	0.01 - 25	NR	14	0.1 - 0.95	0.4 - 6				
Rinse-Off	NR	1	NR	NR	168	125	0.00033 - 2.5	0.2 - 6	NR	9	0.088 - 6	0.2 - 3				
Diluted for (Bath) Use	NR	NR	NR	NR	1	NR	1	3	NR	NR	0.15 - 0.75	NR				
Exposure Type																
Eye Area	NR	NR	NR	NR	84	19	0.5 - 2.5	0.5 - 4	NR	1	NR	2 - 3				
Incidental Ingestion	NR	NR	NR	NR	7	NR	NR	0.3 - 5	NR	NR	NR	NR				
Incidental Inhalation-Spray	NR	NR	NR	NR	20; 1110 ^a ; 347 ^b	16; 141 ^a ; 60 ^b	0.25 - 1.8; 0.25 - 4.5 ^a	3; 0.01 - 4 ^a ; 0.3 - 5 ^b	NR	1; 7 ^a ; 4 ^b	NR	0.5 - 1 ^a ; 0.8 - 2 ^b				
Incidental Inhalation-Powder	NR	NR	NR	NR	1; 347 ^b ; 7 ^c	60 ^b ; 5 ^c	1.5; 0.25 - 3.3 ^c	0.3 - 5 ^b ; 1 ^c	NR	4 ^b	0.15 - 0.95 ^c	0.8 - 2 ^b				
Dermal Contact	NR	1	NR	NR	1737	365	0.0003 - 3.8	0.01 - 25	NR	14	0.15 - 6	0.5 - 6				
Deodorant (underarm)	NR	NR	NR	NR	NR	3 ^a	2.5 - 3.8	0.5 - 25 ^a	NR	NR	NR	NR				
Hair - Non-Coloring	NR	NR	NR	NR	56	39	0.0065 - 4.5	0.2 - 4	NR	8	0.088 - 0.75	0.2 - 0.4				
Hair-Coloring	NR	NR	NR	NR	23	9	0.98	NR	NR	NR	0.18	NR				
Nail	NR	NR	NR	NR	6	3	2.5 - 6	3	NR	1	NR	NR				
Mucous Membrane	NR	NR	NR	NR	20	24	0.00033 - 2	0.3 - 5	NR	NR	0.15 - 2.3	0.5				
Baby Products	NR	NR	NR	NR	8	5	1 - 1.4	1	NR	NR	0.7	NR				
as reported by product category																
Baby Products																
Baby Shampoos									NR	NR	0.7	NR				
Baby Lotions/Oils/Powders/Creams					7	5	1 - 1.4	1								
Other Baby Products					1	NR	NR	NR								
Bath Preparations (diluted for use)																
Bubble Baths									NR	NR	0.75	NR				
Other Bath Preparations					1	NR	1	3	NR	NR	0.15	NR				
Eye Makeup Preparations																
Eyebrow Pencil					1	1	0.5	NR								
Eyeliner					NR	2	NR	1	NR	NR	NR	3				
Eye Shadow					2	NR	NR	NR								
Eye Lotion					50	3	0.57 - 2.5	0.5 - 4	NR	1	NR	NR				
Eye Makeup Remover									NR	NR	NR	2				
Mascara					15	8	0.5 - 2.5	2 - 3								
Other Eye Makeup Preparations					16	5	NR	1 - 3								
Fragrance Preparations																
Cologne and Toilet Water					NR	NR	0.25	NR								
Perfumes					10	1	NR	3								
Sachets																
Other Fragrance Preparation					10	14	1.2 - 1.8	NR	NR	1	NR	NR				

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	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Hair Preparations (non-coloring)																
Hair Conditioner					15	30	0.023 – 2.5	0.2 – 4	NR	3	NR	NR				
Hair Straighteners					2	NR	NR	NR	NR	2	NR	NR				
Rinses (non-coloring)					1	2	NR	0.6								
Shampoos (non-coloring)					6	NR	0.0065 – 2.1	NR	NR	3	0.088 – 0.75	0.2				
Tonics, Dressings, and Other Hair Grooming Aids					29	2	0.25 – 4.5	NR			0.1					
Other Hair Preparations					3	5	NR	3	NR	NR	NR	0.4				
Hair Coloring Preparations																
Hair Dyes and Colors (all types requiring caution statements and patch tests)					21	2	0.98	NR	NR	NR	0.18	NR				
Hair Tints					NR	1	NR	NR								
Hair Color Sprays (aerosol)					NR	1	NR	NR								
Hair Lighteners with Color					NR	1	NR	NR								
Hair Bleaches					NR	2	NR	NR								
Other Hair Coloring Preparation					2	2	NR	NR								
Makeup Preparations																
Blushers (all types)					NR	NR	1	NR	NR	NR	NR	1				
Face Powders					1	NR	1.5	NR								
Foundations					NR	6	NR	0.5 – 2								
Lipstick					7	NR	NR	0.3 – 5								
Makeup Bases					4	1	NR	NR								
Rouges									NR	NR	NR	0.6				
Makeup Fixatives					1	1	NR	NR								
Other Makeup Preparations					3	NR	NR	4	NR	NR	NR	3				
Manicuring Preparations (Nail)																
Cuticle Softeners					NR	2	2.5	3								
Nail Creams and Lotions					4	1	6	NR								
Other Manicuring Preparations					2	NR	NR	NR	NR	1	NR	NR				
Personal Cleanliness Products																
Bath Soaps and Detergents					7	NR	0.00033 - 2	0.8	NR	NR	0.7	0.5				
Deodorants (underarm)					NR	3	not spray: 2.5 – 3.8	0.5 – 25								
Other Personal Cleanliness Products					5	24	NR	2	NR	NR	2.3	NR				
Shaving Preparations																
Aftershave Lotion					5	1	1.2	0.8 – 2								
Beard Softeners					1	NR	NR	NR								
Shaving Cream					3	NR	2.1	NR								
Other Shaving Preparations					1	1	NR	0.8								
Skin Care Preparations																
Cleansing					80	38	1 – 2	1 – 5	NR	NR	0.5 – 6	2 – 3				
Depilatories					2	NR	NR	NR								
Face and Neck (exc shave)					207	25	not spray: 0.5 – 2.5	0.3 – 5	NR	NR	not spray: 0.4	2				
Body and Hand (exc shave)					140	34	not spray: 0.25 – 3.3	3	NR	3	not spray: 0.15 – 0.95	0.8				
Foot Powders and Sprays					NR	1	NR	NR	NR	1	NR	NR				
Moisturizing					1010	85	not spray: 0.0075 – 3.2	1 – 3	R	4	NR	0.8 – 1				

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	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²	2023 ³	2002 ²	2023 ⁴	2002 ²
Night					56	20	not spray: 0.32 – 1	0.01 – 3	NR	2	not spray: 0.3	0.5 – 1				
Paste Masks (mud packs)	NR	1	NR	NR	23	22	0.0075 – 1.5	2 – 6	NR	1	NR	NR				
Skin Fresheners					5	2	NR	NR	NR	1	NR	NR				
Other Skin Care Preparations					75	38	2.5	0.9 – 3	NR	NR	NR	6				
<i>Suntan Preparations</i>																
Suntan Gels, Creams, and Liquids					5	14	not spray: 1.5	3								
Indoor Tanning Preparations					3	18	1.3	2 – 4								
Other Suntan Preparations					2	NR	NR	NR								

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