

Prunus Amygdalus Dulcis (Sweet Almond) Seed Meal

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Abstract

The Expert Panel for Cosmetic Ingredient Safety reviewed updated information that has become available since their original assessment from 1983, along with updated information regarding product types, and frequency and concentrations of use, and reaffirmed their original conclusion that *Prunus Amygdalus Dulcis* (Sweet Almond) Seed Meal is safe for topical application to humans in the practices of use and concentration as described in this report.

Keywords

Cosmetics, *Prunus Amygdalus Dulcis* (Sweet Almond) Seed Meal, Safety

The Expert Panel for Cosmetic Ingredient Safety (Panel) first published the Final Report on the Safety Assessment of Sweet Almond Oil and Almond Meal in 1983.¹ On the basis of the available animal data and limited clinical experience presented in the report, the Panel concluded that Almond Meal (now named *Prunus Amygdalus Dulcis* (Sweet Almond) Seed Meal) is safe for topical application to humans in the present practices of use and concentration. Upon re-review in November 2002, the Panel reaffirmed the original conclusion, as published in 2005.² *Prunus Amygdalus Dulcis* (Sweet Almond) Oil was not considered in this re-review because it was included in the safety assessment of plant-derived fatty acids, published in 2017.³

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 considered whether the safety assessment should be reopened. At its March 2023 meeting, the Panel considered updated (2022) information regarding product types and ingredient use frequencies as reported in the US Food and Drug Administration (FDA) Voluntary Cosmetic Registration Program (VCRP) database⁴ and maximum use concentrations provided in response to the survey conducted by the Personal Care Products Council.⁵ Since the initial re-review was considered, the frequency of use for *Prunus Amygdalus Dulcis* (Sweet Almond) Seed Meal has decreased slightly from 15 to 14 uses.⁴ In 2002, the maximum concentration of use for this ingredient was reported to be 27% in leave-on products and 2% in rinse-off products.² No concentrations of use were reported in the 2022 survey for this ingredient.⁵ The cumulative frequency and concentration of use data are presented in Table 1.

In January 2023, an extensive search of the world's literature was performed for studies dated 1997 forward. No new toxicological data were found.

In summary, the Panel reviewed 2022 frequency and concentration of use data and noted the lack of any 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 this ingredient 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>.

Author's Note

Unpublished sources cited in this report are available from the Director, Cosmetic Ingredient Review, 1620 L Street, NW, Suite 1200, Washington, DC 20036, USA.

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Table 1. Frequency and Concentration of Use (2022/2002) According to Likely Duration and Exposure and by Product Category.

	# of Uses		Max Conc of Use (%)	
	2022 ⁴	2002 ²	2022 ⁵	2002 ²
Totals ^b	14 ^a	15	NR	.5-27
Summarized by likely duration and exposure ^c				
Duration of use				
Leave-on	12	3	NR	.5-27
Rinse-off	2	12	NR	.5-2
Diluted for (bath) use	NR	NR	NR	NR
Exposure type				
Eye area	1	NR	NR	NR
Incidental ingestion	NR	NR	NR	NR
Incidental inhalation-spray	2 ^d ; 1 ^e	1 ^e	NR	0.5 ^e
Incidental inhalation-powder	2; 1 ^e	1 ^e	NR	27; 0.5 ^e
Dermal contact	14	14	NR	.5-27
Deodorant (underarm)	NR	NR	NR	NR
Hair – non-coloring	NR	NR	NR	NR
Hair-coloring	NR	NR	NR	NR
Nail	NR	1	NR	NR
Mucous membrane	1	3	NR	.5-2
Baby products	NR	NR	NR	NR
As reported by product category				
Eye makeup preparations				
Other eye makeup preparations	1	NR	NR	NR
Fragrance preparations				
Powders (dusting/talcum, excl aftershave talc)	NR	NR	NR	27
Makeup preparations				
Face powders	2	NR	NR	NR
Makeup bases	1	NR	NR	NR
Makeup fixatives	2	NR	NR	NR
Other makeup preparations	1	NR	NR	NR
Manicuring preparations (nail)				
Cuticle softeners	NR	1	NR	NR
Personal cleanliness products				
Bath soaps and detergents	NR	2	NR	.5-2
Other personal cleanliness products	1	1	NR	NR
Skin care preparations				
Cleansing	1	2	NR	NR
Body and hand (exc. shave)	1	1	NR	0.5
Moisturizing	2	NR	NR	NR
Paste masks (mud packs)	1	7	NR	2
Other skin care preparations	1	1	NR	NR

NR, not reported.

^aReported as Prunus Dulcis (Sweet Almond) Seed Meal in the 2022 VCRP.^bBecause each ingredient may be used in cosmetics with multiple exposure types, the sum of all exposure types may not equal the sum of total uses.^cLikely duration and exposure is derived based on product category (see Use Categorization <https://www.cir-safety.org/cir-findings>).^dIt is possible these products are sprays, but it is not specified whether the reported uses are sprays.^eNot specified whether a spray or a powder, but it is possible the use can be as a spray or a powder; therefore, the information is captured in both categories.

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References

1. Elder R. ed. Final report on the safety assessment of Sweet Almond Oil and Almond meal. *J Am Coll Toxicol*. 1983;2(5):85-99.
2. Andersen FA. ed. Annual review of cosmetic ingredient safety assessments - 2002/2003. Sweet Almond Oil and Almond meal. *Int J Toxicol*. 2005;24(Suppl 1):98-101.
3. Burnett CL, Fiume MM, Bergfeld WF, et al. Safety assessment of plant-derived fatty acid Oils. *Int J Toxicol*. 2017;36(Suppl 3):51S-129S.
4. US Food and Drug Administration (FDA) Center for Food Safety & Applied Nutrition (CFSAN). *Voluntary cosmetic registration Program - frequency of use of cosmetic ingredients*. (Obtained under the freedom of information act from CFSAN; requested as "Frequency of Use Data" January 4, 2022; received January 11, 2022). College Park, MD; 2022.
5. Personal Care Products Council. Concentration of use by FDA product category: *Prunus Amygdalus Dulcis* seed meal. Unpublished data submitted by Personal Care Products Council on October 28, 2022. 2022.