

# Glyoxal

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## Abstract

The Expert Panel for Cosmetic Ingredient Safety reviewed information that has become available since their year 2000 assessment, along with updated information regarding product types, and frequency and concentrations of use, and reaffirmed their original conclusion that Glyoxal is safe for use in products intended to be applied to the nail at concentrations  $\leq 1.25\%$  and that the available data are insufficient to support the safety for other uses.

## Keywords

Cosmetics, Safety, Glyoxal

The Expert Panel for Cosmetic Ingredient Safety first published a Final Report on the Safety Assessment of Glyoxal (CAS No. 107-22-2) in 1995; in that report, the Expert Panel stated that the data were insufficient to support the safety of Glyoxal.<sup>1</sup> The data needs were:

- (1) Types of cosmetic products Glyoxal is used in and the typical concentrations of use for each of these products.
- (2) Impurities, especially with respect to selenium and chlorinated organic compounds and the Glyoxal monomer.
- (3) Dermal carcinogenesis using the methods of the National Toxicology Program's skin-painting studies. It is recognized that there are no reproductive or developmental toxicity data available to analyze—depending on the results of the studies described, additional data may be requested.

In an amended safety assessment published in 2000, the Expert Panel reviewed additional information, including dermal carcinogenicity in mice and impurity data, and concluded that Glyoxal is safe for use in products intended to be applied to the nail at concentrations  $\leq 1.25\%$ .<sup>2</sup> They also concluded that the available data are insufficient to support the safety for other uses.

The Expert Panel has now reviewed information that has become available since the year 2000 assessment, along with updated information regarding product types, and frequency and concentrations of use.<sup>3-15</sup> The Expert Panel determined to not reopen this safety assessment and reaffirmed the

conclusion published in 2000 that Glyoxal is safe for use in products intended to be applied to the nail at concentrations  $\leq 1.25\%$  and that the available data are insufficient to support the safety for other uses.

In 1998, there were no uses reported for Glyoxal.<sup>2</sup> There were no reported concentrations of use in 1998 or 2016.<sup>2,7</sup> However, in 2017, Glyoxal was reported to be used in 2 formulations, 1 basecoats and undercoats and 1 face and neck product.<sup>5</sup> The Expert Panel notes that the data do not support the safety of the latter reported use.

The Expert Panel noted that suppliers should take steps to limit the concentration of the free formalin impurity to .2% (.074% (w/w) calculated as formaldehyde or .118% (w/w) calculated as methylene glycol), which is consistent with the 2013 safety assessment of Formaldehyde and Methylene Glycol.<sup>16</sup>

## Author's Note

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