

## ISOBUTYL NITRITE, $\beta$ -PICOLINE, AND SOME ACRYLATES

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OF CARCINOGENIC RISKS  
TO HUMANS

## GENERAL REMARKS

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This one-hundred-and-twenty-second volume of the *IARC Monographs* contains evaluations of the carcinogenic hazard to humans of isobutyl nitrite,  $\beta$ -picoline, methyl acrylate, ethyl acrylate, 2-ethylhexyl acrylate, and trimethylolpropane triacrylate.

Exposure measurements and biomonitoring studies have shown that workers and the general population are exposed to these agents. Three of these agents were evaluated previously in Volume 71 (methyl acrylate and ethyl acrylate) and in Volume 60 (2-ethylhexyl acrylate) of the *IARC Monographs* ([IARC, 1994](#); [1999](#)), when the Working Group evaluated methyl acrylate and 2-ethylhexyl acrylate as *not classifiable as to its carcinogenicity to humans* (Group 3) and ethyl acrylate as *possibly carcinogenic to humans* (Group 2B). Since the previous evaluations, new data have become available, primarily in experimental animals, and these data have been included and considered in the present volume. Epidemiological data were lacking for five of the agents and only one study was available for ethyl acrylate. A summary of the findings of this volume appears in *The Lancet Oncology* ([Kromhout et al., 2018](#)).

### Chemicals with a high production volume

All four acrylates evaluated are “high production volume” chemicals. Sparse quantitative data were available to characterize exposure to most of these agents in the workplace

or general population. Occupational exposure occurs primarily through inhalation and dermal contact during production and use as intermediates. Exposure of the general population occurs through food, consumer products (e.g. latex paints), and from materials (e.g. furniture and floor polishes) containing these agents.

### Evaluation of data on the mechanisms of carcinogenesis

In its evaluation of data on mechanisms of carcinogenesis, the Working Group used the procedures first introduced in Volume 112 of the *IARC Monographs* for assessing the strength of evidence with respect to 10 key characteristics of carcinogens ([Smith et al., 2016](#)), and for reviewing data from large-scale toxicity-testing programmes ([IARC, 2017](#)).

### References

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