

# Reference list of flavoring substances in use in the United States

R. A. Ford and G. M. Cramer, Consultant and Staff Chemist, respectively  
Flavor & Extract Manufacturers' Association, Washington, D.C.

There are over 1700 substances used as flavoring materials in the United States. Many of these are in use in Europe as well. This compilation is an attempt to list all such substances alphabetically both by principal name and by all synonyms as well as to provide reference to the various lists both in the U.S. and Europe that contain these substances. This listing has no legal status. It should, therefore, be used for reference purposes only.

The substances included on the list are derived from three sources. The largest number are found in the published GRAS (generally recognized as safe) lists of the Flavor and Extract Manufacturers' Association (FEMA).<sup>1,3</sup> All substances listed in 21 Code of Federal Regulations (CFR) 121.1163, 121.1164, and 121.101(g) are included. Finally any additional substances reported in the 1970-71 FEMA survey of flavoring substances in use in the US are also included.

Numerical references are given to the above mentioned lists, as well as to three European lists of flavor substances. They follow each principal name. The first number following the principal name is that assigned the substance in one of the 8 FEMA GRAS lists: Numbers 2001-3124: GRAS 3; 3125-3249: GRAS 4; 3250-3325: GRAS 5; 3326-3390: GRAS 6; 3391-3423: GRAS 7; 3424-3444: GRAS 8; 3445-3475: GRAS 9; and 3476-3525: GRAS 10.

The second number following each principal name refers to the section of the CFR where the substance is listed. The third number refers to the number by which the substance is listed in the publication "Natural Flavouring Substances, Their Sources, and Added Artificial Flavouring Substances" of the Council of Europe (COE).<sup>4</sup> There are some substances in the COE list that are not included here because there is no evidence that these are being used in the USA. The fourth number was derived from a publication of the International Organization of Flavor Industries (IOFI), "Survey of Worldwide Use Levels of Artificial Flavouring Sub-

stances."<sup>5</sup> In the IOFI publication three classes of flavoring substances, numbers 1, 2, or 3 respectively, are defined:

*"Natural flavours and flavouring substances* are preparations and single substances respectively, acceptable for human consumption, obtained exclusively by physical processes from vegetable, sometimes animal raw materials, either in their natural state or processed for human consumption.

*"Nature-identical flavouring substances* are substances chemically isolated from aromatic raw materials or obtained synthetically; they are chemically identical to substances present in natural products intended for human consumption either processed or not.

*"Artificial flavouring substances* are those substances which have not yet been identified in natural products intended for human consumption, either processed or not."

Where data were not sufficient to categorize a substance, a blank is left in this position. The fifth number, numbers 1 through 6, refers to one of the six appendices of the "Report on Review of Flavourings in Food,"<sup>6</sup> published by the Ministry of Agriculture, Fisheries and Food of the United Kingdom (UK list). Again, not all substances on the UK list are included here.

This publication is intended only to aid in the  
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