Securing a Traceable Supply Chain for Food Grade Flavor Ingredients

Introduction

In recent years, consumer confidence in the food supply has been shaken as a result of product recalls and other food scares. Many consumers now question where their food comes from and the ingredients that make it. From a food manufacturer's perspective, a large supply chain failure followed by a major food safety incident may lead to an irreparable damage to company's reputation and a significant hit to its business position within the industry. An example would be the dramatic issues caused by melamine containing baby formula the industry faced in 2008.

Situations of this sort have stressed the need for a more collaborative approach among international flavor manufacturers and regulators in the supply chain. This served as a catalyst for large industry-driven efforts to find global solutions designed to acknowledge the importance of an effective, rapid, and precise product-tracking system to safeguard the flavor ingredients supply chain.

Defining "Food Grade"

There is no universal definition of "food grade" for flavor ingredients, but multiple regulatory systems in place around the world provide the industry with information about what can be considered "food grade". This includes regulatory agencies that designate various requirements, as well as non-profit agencies that offer guidelines. The regulations provide a set of specific standards that must be met for flavor ingredients used in food applications. However, variances in these standards from country to country make it difficult to keep track of the standards for flavoring ingredients in relation to the country where the product is being sold.

In the US, the Food and Drug Administration (FDA) works with national and international regulators to streamline directives and standards. As Michael R. Taylor, FDA Deputy Commissioner for Foods stated during the 2011 Global Food Safety Conference in London, England, "Think of it as supply chain management written into law." All substances considered for Generally Recognized as Safe (GRAS) affirmation — a designation that a food additive or flavor ingredient is considered safe by experts within a specific range of use — must first complete FDA verification that the appropriate tests have been performed prior to applying for the standard. The FDA also indicates that in order for a substance to maintain its GRAS designation, it must be produced "in accordance with Good Manufacturing Practice (GMP) as highlighted in 21 CFR 182.1 (a)". Any items not previously classified as GRAS are subject to a premarket review and approval by the FDA. The Flavor & Extract Manufacturers Association (FEMA) maintains a list of over 2,500 ingredients and substances that are classified as GRAS, and provides an expert panel to review potential new substances. Another organization, the International Organization of the Flavor Industry (IOFI), offers its members guidance by providing a consistent global platform for the production and sale of safe materials to be used as flavor ingredients.

New initiatives like the 2011 US Food Safety Modernization Act (FSMA) have recently added prerequisites for ingredients that may be considered food grade in the US. In addition to the GRAS process, food and flavoring facilities must now comply with Hazard Analysis & Critical Control Points (HACCP) procedures. HACCP is a codified supply chain management system that addresses food and flavor ingredient safety through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.

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In general, the requirements are strictest in the European Union where the EFSA ensures compliance to several directives and laws for flavor ingredients used in food grade applications. These regulations cover a wide range of topics, encompassing extraction solvents used in the production of flavors, HACCP requirements, expiration dating, flavoring categories, and finally a "positive list" of ingredients allowed in the community which includes restrictions and minimum purity requirements, as well as referencing JECFA and FLAVIS numbers. As of March 2013, this will be in full effect, adding to the EU demand to test for the presence of heavy metals.

Understanding "Food Grade" Versus "Industrial Grade"

Food manufacturers searching for flavors and fragrances need to know which ingredients are appropriate for use in food applications. There are many chemicals that have applications in both food and industrial products, so it is imperative that a manufacturer fully comprehends what is suitable for human consumption.

Benzyl alcohol, for example, is used in both food and industrial applications. This chemical is a natural constituent of a number of edible fruits, and green and black tea. As a flavoring agent it is included in the FCC and listed in FEMA's list of ingredients and substances that are GRAS in the US. Benzyl alcohol is often added to foods and beverages to provide flavors like berry, cherry, grapefruit, citrus or walnut, and can also serve as a precursor to other flavors. However, in nonfood applications, benzyl alcohol can be used as a local anesthetic, a solvent for ink, a component of resinous and polymeric coatings, or even for a wide variety of cosmetic formulations such as fragrances, preservatives, and a viscosity-decreasing agent.

Food manufacturers are interested in minimizing unwanted impurities, contamination, and adulteration within the supply chain. As a result, some suppliers choose to cater their ingredients only to industrial and nonfood applications. However, the ones that do choose to manufacture additives for food applications must manufacture those products in accordance with GMP's and offer a secure, transparent and certified supply chain.

When sourcing "food grade" flavor ingredients, it is important to look for a supplier who will actively help in the consultation of their supply chain. A good supplier will ensure that a flavor ingredient meets all of the "food grade" requirements of the country or region where the products will ultimately be sold. They will have a comprehensive understanding of applicable requirements and directives, as well as documented information readily available for customers to review.

Top Questions to Ask a Flavor & Fragrances Supplier

1. What is your approach towards national and international regulations, risk assessment, food quality, and safety management and traceability in food supply chains?
2. Is the material you purchase Generally Recognized as Safe (GRAS) and does the manufacturer utilize good manufacturing practices (GMP)?
3. Is the product produced according to principles of HACCP?
4. Does your supplier, vendor, or sources supply all the documentation needed to attest all the requirements above are met and open to audits of their facility?

The SAFC Approach

SAFC knows the food and beverage industry, having been a supplier of flavor ingredients for over 25 years and understands national and international food safety regulations. To develop and maintain its offer of 1,700+ aroma materials, SAFC only works with qualified vendors that offer fully transparent supply chains. The company also uses some of its in-depth knowledge of implementing raw materials traceability requirements from biopharmaceutical customers to help implement increasingly stringent requirements in the flavor ingredients sector. All SAFC aroma materials are tested for purity and the presence of heavy metals, and a dedicated team of food industry Quality Assurance experts is available to advise and consult on regulatory questions for any food grade program requirements.

Contact Us

To learn more about how SAFC is bringing quality to flavor and fragrance ingredients, please visit our website at **safcglobal.com/flavors-fragrances.**

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