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POSITION STATEMENT

FOOD GASES AND GENETICALLY MODIFIED ORGANISMS (GMO)

Background

Gases alone or in combination that are supplied to the food industry either in gaseous, liquid, or solid form in various types of containers or manufactured onsite and used as food ingredients, additives, or processing aids are called "food gases." These gases may directly or indirectly become a component of food or drink, or otherwise affect the characteristics of food. These gases are considered food or food additives as defined by the U.S. Food, Drug, and Cosmetic Act Sections 201(f) and 201(s) [1].

Genetically modified (GM), also known as genetically engineered (GE), refers to the description of an organism which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination. FDA does not use the terms "genetically modified" or "genetically modified organism" (GMO) when referring to foods derived from genetically engineered plants. Due to public concerns, certain governments are reviewing or have passed legislation related to GMO labeling.

The Vermont Consumer Protection Rule 121, European Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms, and European Regulation (EC) No 1829/2003 on genetically modified food and feed of the European Parliament and of the Council, have established a threshold maximum level of 0.9% (w/w), for GMO material content, which would require labeling regarding the GMO material content. This threshold level has been generally accepted by the food industry [2, 3, 4].

Question

Do food gases contain GMO at a level exceeding the generally accepted threshold maximum level of 0.9% (w/w), which would invoke a requirement for labeling regarding the GMO material content?

Answer

No. Food gases are not organisms; they are elements or simple compounds. Gases themselves do not contain protein, DNA, or RNA, even if the gas is derived from manufacturing processes that utilize 100% GMO as part of the process. As such, it is CGA's position that labeling food gases for GMO content is not required. A statement of conformance to food manufacturers that food gases do not exceed the 0.9% threshold is also not necessary.

The minimum allowable assay level for food gases as specified in CGA's commodity specification publications and other industry specifications are of sufficient purity as to not allow for the presence of genetically modified material greater than the threshold level [5, 6, 7, 8, 9, 10]. Typical impurities found in food gases are often other gases or compounds present at levels expressed in parts per million.

Carbon dioxide sourced from the fermentation process using genetically modified materials is the food gas receiving the most questions regarding GMO status. Due to the manufacturing process of carbon dioxide, no genetically modified material exists in the finished product and cannot be passed on to a customer. CGA member companies have had carbon dioxide that is a byproduct of GMO raw material verified by at least two third party certification bodies that the product meets recognized threshold levels. Since no other food gas utilize genetically modified materials as a raw material, CGA is confident that food gases do not contain GMO.

Based on this reasoning and the fact that food gases are elements and simple compounds that do not contain protein, DNA, or RNA, CGA is confident that the risk of GMO being present in food gases at levels exceeding 0.9% (w/w) is not reasonably likely to occur.

References

Unless otherwise specified, the latest edition shall apply.

- [1] *Food, Drug, and Cosmetic Act*, U.S. Food and Drug Administration. www.fda.gov
- [2] Vermont Consumer Protection Rule 121, *Consumer Protection – Labeling Foods Produced with Genetic Engineering*, Attorney General – Public Protection Division, State of Vermont. www.ago.vermont.gov
- [3] Directive 2001/18/EC, *Deliberate release into the environment of genetically modified organisms*, European Commission, Environment. www.ec.europa.eu/index_en.htm
- [4] European Regulation (EC) No 1829/2003, *Genetically modified food and feed*, European Commission, Environment. www.ec.europa.eu/index_en.htm
- [5] **CGA G-4.3**, *Commodity Specification for Oxygen*, Compressed Gas Association, Inc. www.cganet.com
- [6] **CGA G-5.3**, *Commodity Specification for Hydrogen*, Compressed Gas Association, Inc. www.cganet.com
- [7] **CGA G-6.2**, *Commodity Specification for Carbon Dioxide*, Compressed Gas Association, Inc. www.cganet.com
- [8] **CGA G-8.2**, *Commodity Specification for Nitrous Oxide*, Compressed Gas Association, Inc. www.cganet.com
- [9] **CGA G-10.1**, *Commodity Specification for Nitrogen*, Compressed Gas Association, Inc. www.cganet.com
- [10] **CGA G-11.1**, *Commodity Specification for Argon*, Compressed Gas Association, Inc. www.cganet.com

Additional Reference

Guidance for Industry: Voluntary Labeling Indicating Whether Foods Have or Have Not Been Derived from Genetically Engineered Plants, U.S. Food and Drug Administration, <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ucm059098.htm>