

QUESTION:

Liquid corn wet-milling-based ingredients are transported via truck, rail and other bulk cargo containers. What procedures are followed to assure that food ingredients from the corn wet-milling industry arrive safely and uncompromised at food and beverage processors?

Summary

- Many years ago, member companies of the Corn Refiners Association (CRA) developed stringent product transportation guidelines, designed to ensure that billions of pounds of corn wet-milling-based ingredients produced annually reach food and beverage manufacturers safely and unadulterated. Developed in cooperation with the Food Products Association and food industry partners, these guidelines provide specifications for cargo tank construction and procedures for properly receiving, cleaning, loading and sealing cargo tanks.
- Subsequently, the United States Congress passed the *Sanitary Food Transportation Act of 1990*. The *Act* requires the Secretary of Transportation to issue regulations to promote the safe transportation of food products.
- The U.S. Department of Agriculture published the *Guide for Security Practices in Transporting Agricultural Food Commodities* in October 2004.
- The U.S. Department of Homeland Security, U.S. Customs and Border Protection, undertook the C-TPAT and Container Security Initiative from 2003-2005.
- The Food Industry Transportation Coalition presented to the Food and Drug Administration-CFSAN the *Bulk Over the Road Food Tanker Transport Safety and Security Guidelines* in August 2003.
- Member companies of the Corn Refiners Association continue to develop and follow transportation practices designed to ensure that corn wet-milling-based ingredients reach consumers unchanged, uncontaminated and unadulterated.

1. CRA Food Product Transportation Guidelines

Beginning many years before passage of the *Sanitary Food Transportation Act of 1990*, CRA member companies worked closely with partners in the food and beverage industry to develop responsible practices for the safe and sanitary transport of corn wet-milling-based bulk products. Corn wet-milling

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This document was prepared for CRA by White Technical Research Group (217.795.4437).

industry-wide adoption of *Tank Truck Inspection Guidelines* is one example of sanitary food transportation practices developed in cooperation with the National Food Processors Association, the National Tank Truck Carriers and other food ingredient trade organizations.¹ These *Guidelines* specify construction materials for cargo tanks, fittings and accessories, and provide detailed procedures for properly receiving, cleaning, loading, labeling and sealing cargo tanks. Details of the *Guidelines* are summarized below to illustrate the care and concern members of the Corn Refiners Association have for the safe and sanitary transportation of corn wet-milling-based food ingredients.

- Since many corn ingredients readily absorb residual flavors and odors, they should be transported only in committed food containers. Containers are washed only with hot water prior to reuse, so seemingly innocuous prior ingredients like vegetable oils or milk products are not allowed, as they cannot be effectively removed under these wash conditions. Table 1 lists examples of products that may be hauled in containers that transport sweeteners.
- Prior to washing, the container interior should be visually inspected with a shielded light to confirm that no abnormal conditions exist. Characteristic odors of many prohibited prior products can be detected during this preliminary inspection.
- The inside container surface should be sanitized by continuous washing with 180°F water for 15 minutes. The container should then be cooled down to allow final visual confirmation that the tanker is clean and drained.
- Procedures are designed to ensure that containers are not compromised between washing and loading. Tamper evident seals are properly applied to access points immediately after washing and inspecting and prior to moving if the container is outside the control of the manufacturer.
- If washed containers are not loaded within 24 hrs of washing, the container should be re-inspected and rewashed if necessary before loading.
- Once containers are loaded, they are closed and sealed immediately.¹

Table 1: Examples of products permissible in sweetener containers.

| Product |
|--------------------------------------|
| Clear, Non-flavored Beverage Alcohol |
| Food Grade Citric Acid |
| Corn Syrups |
| High Fructose Corn Syrups |
| Liquid Invert Sugar |
| Liquid Sucrose |
| Liquid Sweetener Blends |
| Liquid Dextrose |
| Phosphoric Acid |
| Mannitol |
| Sorbitol |
| Potable Water |

2. Food Transportation in the U.S.

Congress passed the *Sanitary Food Transportation Act* (SFTA)² in 1990. Through passage of this *Act*, the Department of Transportation (DOT) joined Health & Human Services' Food & Drug Administration (FDA) and the Department of Agriculture's Food Safety Information Service (FSIS) as federal agencies with responsibility for oversight of food transportation safety. Specifically, the *Act* required DOT and the Secretary of Transportation to:

- i. Issue regulations to promote the safe transportation and storage of food by truck and rail;
- ii. Issue regulations describing "dedicated vehicles" (i.e., vehicles that haul only extremely hazardous materials or refuse) which are prohibited from transporting food;
- iii. Implement a training program for its safety inspectors;

- iv. Consult with the Secretaries of Agriculture and Health & Human Services, and the Administrator of EPA on how to implement the Act; and
- v. Develop lists of: non-food products not unsafe, unsafe non-food products, waivers and coordination procedures.

Because the Secretary of Transportation has failed since 1991 to issue regulations to implement the provisions listed above, transportation of food products in the U.S. remains under the jurisdiction of FDA and FSIS, per the *Federal Food, Drug and Cosmetic Act*³ and the *Federal Meat Inspection Act*⁴. Under these laws, transporting adulterated food in interstate commerce or transporting food in such a manner that it becomes adulterated is prohibited.

Food is adulterated if it bears or contains any added poisonous or deleterious substance which may render it injurious to health, or has been held under unsanitary conditions whereby it may have become contaminated with filth or rendered injurious to health or is unfit for food. Specifically, the Food, Drug and Cosmetic Act prohibits:

- i. the introduction or delivery for introduction into interstate commerce of any food that is adulterated;
- ii. the adulteration of any food in interstate commerce; and
- iii. the delivery or receipt in interstate commerce of any food that is adulterated.⁵

Section 10 of the *Federal Meat Inspection Act* prohibits doing any act that may cause food to become adulterated while the food is being transported or held for sale.⁶

Under the general “non-adulteration” standard, transportation of food must be accomplished so as to maintain the safety of the food. Transportation of food in a vehicle previously carrying refuse or hazardous materials is prohibited, since that would be holding or transporting food in unsanitary conditions, permitting it to become contaminated with filth.

Though the *Sanitary Food Transportation Act of 1990* has yet to be implemented by the Department of Transportation, food manufacturers are still obliged to exercise care that container vehicles do not themselves adulterate food through contamination with prior hazardous or other unsanitary materials transported in the same vehicle.

3. Transportation Management by the Corn Wet-Milling Industry

Member companies of the Corn Refiners Association continue to develop and follow transportation practices designed to ensure that corn wet milling-based ingredients reach consumers unchanged, uncontaminated and unadulterated. We recommend that all bulk food transportation containers be sealed at all times including after loading, after delivery and after washing.

References

- ¹Food Products Association (FPA), Corn Refiners Association, Institute of Shortening & Edible Oils, National Institute of Oilseed Products and National Tank Truck Carriers, Tank Truck Inspection Guidelines, FPA, Washington, DC. Reprints may be obtained by contacting FPA.
- ² International Society of Beverage Technologists, High Fructose Corn Syrup 42 and 55. Reprints of sanitation guidelines may be obtained by accessing their publications catalog on-line at www.bevtech.org.
- ³ Sanitary Food Transportation Act of 1990, U.S. Congress, Title 49, Chapter 37, Sections 1-14 (2801-2812), November 3, 1990.
- ⁴ 21 U.S.C., Sections 321 and those that follow.
- ⁵ 21 U.S.C., Sections 601 and those that follow.
- ⁶ 21 U.S.C., Section 331.
- ⁷ 21 U.S.C., Section 610.