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Voluntary - Public

Date: 3/28/2019

GAIN Report Number: JA9034

Japan

Post: Tokyo

Japan Proposes an Addition of Argon as a Food Additive

Report Categories:

Sanitary/Phytosanitary/Food Safety

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Report Highlights:

On March 18, 2019, Japan notified the World Trade Organization (WTO) of a proposal to designate Argon as a food additive via [G/SPS/N/JPN/622](#). There will be no public comment period established for this proposal as this proposal relaxes the regulation. However, interested U.S. parties are welcomed to share their comments and/or concerns with USDA's enquiry point (us.spsenquiry@fas.usda.gov).

Keywords: JA9034, food additive, Argon

General Information:

On March 18, 2019, Japan notified the World Trade Organization (WTO) of a proposal to designate Argon as a food additive via [G/SPS/N/JPN/622](#). In the notification, the Ministry of Health, Labour and Welfare (MHLW), the regulatory agency responsible for food safety in Japan, designates argon as a food additive and specifies Annex 1 below as standards for use of argon as a food additive. This proposal will take an immediate effect once the official Japanese Governmental Gazette is published.

There will be no public comment period established for this proposal as this proposal relaxes the regulation. However, interested U.S. parties are welcomed to share their comments and/or concerns with USDA's enquiry point (us.spsenquiry@fas.usda.gov).

(The following is taken from Japan's notification)

Annex 1 - Amendment to the Ordinance for Enforcement of the Food Sanitation Act and the Specifications and Standards for Foods, Food Additives, Etc.

The government of Japan will designate Argon as an authorized food additive and establish the standards for use and the compositional specifications.

Summary

The Food Sanitation Act (hereinafter referred to as “the Act”), in Article 10, prohibits the use and the sale of the food additives the Minister of Health, Labour and Welfare (hereinafter referred to as “the Minister”) does not designate. In addition, when specifications or standards for food additives are stipulated in the Specifications and Standards for Foods, Food Additives, Etc. (Ministry of Health and Welfare Notification No. 370, 1959) pursuant to Article 11 of the Act, those additives shall not be used or sold unless they meet the standards or the specifications.

In response to a request from the Minister, the Committee on Food Additives of the Food Sanitation Council under the Pharmaceutical Affairs and Food Sanitation Council (hereinafter referred to as “the Committee”) has discussed the adequacy of the designation of Argon as a food additive. The conclusion of the Committee is outlined below.

Outline of conclusion

The Minister, pursuant to Article 10 of the Act, should designate Argon as a food additive unlikely to harm human health and establish the standards for use and the compositional specifications pursuant to Article 11 of the Act (see Attachment for the details).

Attachment

Argon Argon gas アルゴン

Standards for use (draft)

Not specified

Compositional specifications (draft)

Substance name Argon

Molecular weight 39.95

Chemical name [CAS number] Argon [7440-37-1]

Definition Argon is a substance produced using the air liquefaction separation method.

Content Argon contains not less than 99.0% (vol) of argon (Ar).

Description Argon is a colorless gas having no odor.

Identification

- (1) When a burning wood chip with a flame is placed in a test tube containing Argon, the flame goes off.
- (2) Introduce Argon into a 1-mL gas measuring tube for gas chromatography, and analyze it by gas chromatography using the operation conditions given in Purity (ii) below. The retention time of the main peak corresponds to that of the main peak obtained when the reagent argon is analyzed in the same manner.

Purity Oxygen and Nitrogen Not more than 1.0% (vol) as the total amount.

(i) Oxygen

Measure oxygen in Argon using a yellow phosphor luminescent oxygen analyzer and determine the amount (% (vol)). If the amount of oxygen obtained exceeds the measurement range of the meter, exactly dilute the sample gas with oxygen-free nitrogen, and determine the amount.

(ii) Nitrogen

Introduce Argon into a 1.0-mL gas measuring tube for gas chromatography at constant flow rate of 50–150 mL/min, analyze it using the operating conditions below, and obtain the peak area (A_T) of nitrogen. Separately, prepare a constant amount of a uniform gas mixture with the nitrogen concentration of about 0.5% (vol) by mixing a constant amount of nitrogen, measured exactly, with the carrier gas given below. Use this as the standard gas mixture. Introduce the standard gas mixture into a gas measuring tube with same amount at the same flow rate, proceed as directed for Argon, and obtain the peak area (A_S) of nitrogen in the gas mixture. Determine the amount (% (vol)) of nitrogen in Argon by the formula:

$$\text{Amount (\% (vol)) of nitrogen (N}_2\text{)} = V_S \times \frac{A_T}{A_S}$$

V_S : Amount (% (vol)) of nitrogen in the standard gas mixture

Operating Conditions

Detector: Thermal conductivity detector

Column: A stainless steel tube (about 3 mm internal diameter and about 3 m length)

Column packing material: 180–250 μm zeolite for gas chromatography Column

temperature: A constant temperature of 50–150°C

Carrier gas: Hydrogen or helium

Flow rate: A constant rate of 20–40 mL/min Injection: Loop

injection using a gas measuring tube

(iii) Total amount

Determine the total amount of oxygen and nitrogen from the amount (% (vol)) of oxygen obtained in (i) and the amount (% (vol)) of nitrogen obtained in (ii) by the formula:

Total amount (% (vol)) of oxygen and nitrogen (% (vol)) = $V_O + V_N$ V_O : Amount
(% (vol)) of oxygen obtained in (i) V_N : Amount (% (vol)) of nitrogen
obtained in (ii)

Water content Not more than 0.05% (vol)

Measure using capacitance moisture meter and determine the amount (% (vol)) of the water content from the obtained value.

Assay Calculate the content of Argon from the total amount of oxygen and nitrogen, and water content obtained in Purity (iii) by the formula:

Content of argon (% (vol)) = $100 - V_{ON} - V_W$

V_{ON} : Total amount (% (vol)) of oxygen and nitrogen

V_W : Amount (% (vol)) of water content

Reagent and test solutions Argon Ar [K1105, Second grade] [7440-37-1]

Measurement instruments

For a yellow phosphor luminescent oxygen analyzer and a capacitance moisture meter, use units meeting Japanese Industrial Standards K1105.