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Standard Guide for Packaging Materials for Foods to Be Irradiated¹

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INTRODUCTION

This guide provides information on the selection and use of packaging materials intended to hold food during irradiation with ionizing energy. In general, irradiation is used to reduce the incidence of spoilage and pathogenic microorganisms and parasites in foods, control sprouting of tubers and bulbs, and serve as a quarantine treatment for insect disinfestation in fresh fruits and other commodities. Packaging materials serve to protect the product from recontamination after irradiation and may be used to complement other preservation techniques to extend the shelf life of the irradiated food.

This guide serves the following purposes: (1) identifying known regulations worldwide pertaining to packaging materials for holding foods during irradiation; (2) examining the selection of packaging materials for intended uses (for example, product protection or preservation effect); and (3) examining the criteria for fitness for use. This guide should be regarded as providing a format to assist manufacturers and users in selecting materials that comply with applicable regulations and have characteristics desirable for their intended uses.

1. Scope

1.1 This guide outlines parameters that should be considered when selecting food-contact packaging materials intended for use during the irradiation of prepackaged foods.

1.2 This guide highlights the role of packaging in conjunction with irradiation in controlling microbial and chemical spoilage processes.

1.3 This guide does not address all regulatory issues associated with packaging materials for foods to be irradiated. It is the responsibility of the user of this guide to determine the pertinent regulatory issues in each country where irradiated foods are to be produced or distributed.

1.4 This guide does not address all of the food safety issues associated with the synergistic effects of irradiation and packaging as food preservation techniques on the extension of shelf life. It is the responsibility of the user of this guide to conduct appropriate risk analyses to determine the critical food safety issues.

1.5 This guide does not address all the effects of irradiation and packaging on food quality and shelf life. It is the responsibility of the user of this guide to conduct appropriate product assessment tests to determine the compatibility between the packaging application and irradiation relative to changes in sensory attributes and shelf life.

1.6 This guide does not address the use of irradiation as a processing aid for the manufacture or sterilization of food packaging materials.

1.7 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:

D 3985 Test Method for Oxygen Gas Transmission Through Plastic Film and Sheeting Using a Coulometric Sensor²

E 460 Practice for Determining Effect of Packaging on Food and Beverage Products During Storage³

E 462 Test Method for Odor and Taste Transfer from Packaging Film³

F 1355 Guide for Irradiation of Fresh Fruits for Disinfestation as a Quarantine Treatment³

F 1356 Guide for the Irradiation of Fresh and Frozen Red Meats and Poultry (to Control Pathogens)³

2.2 Other Standards:

Canada Food and Drug Act, Division 23, Sec. B23.001⁴

Relatif aux dossiers de demande d'autorisation d'emploi des constituants de matériaux et objets mis ou destinés à être

¹ This guide is under the jurisdiction of ASTM Committee E10 on Nuclear Technology and Applications and is the direct responsibility of Subcommittee E10.06 on Food Irradiation Processing and Packaging.

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² *Annual Book of ASTM Standards*, Vol 15.09.

³ *Annual Book of ASTM Standards*, Vol 15.07.

⁴ Available from Canada Communications Group, Supply & Service, Publishing Centre, 45 Sacre-Coeur Blvd., Hull, Quebec, K1A 0S9, Canada.