



“Treated with radiation” or the statement “Treated by irradiation” in addition to information required by other regulations. The logo shall be placed prominently and conspicuously in conjunction with the required statement. The radiation disclosure statement is not required to be more prominent than the declaration of ingredients required under §101.4 of this chapter. As used in this provision, the term “radiation disclosure statement” means the written statement that discloses that a food has been intentionally subject to irradiation.

(2) For irradiated foods not in package form, the required logo and phrase “Treated with radiation” or “Treated by irradiation” shall be displayed to the purchaser with either (i) the labeling of the bulk container plainly in view or (ii) a counter sign, card, or other appropriate device bearing the information that the product has been treated with radiation. As an alternative, each item of food may be individually labeled. In either case, the information must be prominently and conspicuously displayed to purchasers. The labeling requirement applies only to a food that has been irradiated, not to a food that merely contains an irradiated ingredient but that has not itself been irradiated.

(3) For a food, any portion of which is irradiated in conformance with paragraph (b) of this section, the label and labeling and invoices or bills of lading shall bear either the statement “Treated with radiation—do not irradiate again” or the statement “Treated by irradiation—do not irradiate again”

when shipped to a food manufacturer or processor for further processing, labeling, or packing.

[51 FR 13399, Apr. 18, 1986, as amended at 53 FR 12757, Apr. 18, 1988; 53 FR 53209, Dec. 30, 1988; 54 FR 32335, Aug. 7, 1989; 55 FR 14415, Apr. 18, 1990; 55 FR 18544, May 2, 1990; 60 FR 12670, Mar. 8, 1995; 62 FR 64121, Dec. 3, 1997; 63 FR 43876, Aug. 17, 1998; 65 FR 45282, July 21, 2000; 65 FR 64607, Oct. 30, 2000; 69 FR 76846, Dec. 23, 2004; 70 FR 48072, Aug. 16, 2005; 73 FR 49603, Aug. 22, 2008]

**§ 179.30 Radiofrequency radiation for the heating of food, including microwave frequencies.**

Radiofrequency radiation, including microwave frequencies, may be safely used for heating food under the following conditions:

(a) The radiation source consists of electronic equipment producing radio waves with specific frequencies for this purpose authorized by the Federal Communications Commission.

(b) The radiation is used or intended for use in the production of heat in food wherever heat is necessary and effective in the treatment or processing of food.

**§ 179.39 Ultraviolet radiation for the processing and treatment of food.**

Ultraviolet radiation for the processing and treatment of food may be safely used under the following conditions:

(a) The radiation sources consist of low pressure mercury lamps emitting 90 percent of the emission at a wavelength of 253.7 nanometers (2,537 Angstroms).

(b) The ultraviolet radiation is used or intended for use as follows:

Irradiated food	Limitations	Use
Food and food products .....	Without ozone production: high fat-content food irradiated in vacuum or in an inert atmosphere; intensity of radiation, 1 W (of 2,537 A. radiation) per 5 to 10 ft. <sup>2</sup> .	Surface microorganism control.
Potable water .....	Without ozone production; coefficient of absorption, 0.19 per cm or less; flow rate, 100 gal/h per watt of 2,537 A. radiation; water depth, 1 cm or less; lamp-operating temperature, 36 to 46 °C..	Sterilization of water used in food production.
Juice products .....	Turbulent flow through tubes with a minimum Reynolds number of 2,200..	Reduction of human pathogens and other microorganisms.

[42 FR 14635, Mar. 15, 1977, as amended at 65 FR 71057, Nov. 29, 2000]

**§ 179.41 Pulsed light for the treatment of food.**

Pulsed light may be safely used for treatment of foods under the following conditions:

(a) The radiation sources consist of xenon flashlamps designed to emit broadband radiation consisting of wavelengths covering the range of 200 to 1,100 nanometers (nm), and operated so that the pulse duration is no longer than 2 milliseconds (msec);

(b) The treatment is used for surface microorganism control;

(c) Foods treated with pulsed light shall receive the minimum treatment reasonably required to accomplish the intended technical effect; and

(d) The total cumulative treatment shall not exceed 12.0 Joules/square centimeter (J/cm<sup>2</sup>).

[61 FR 42383, Aug. 15, 1996]

**Subpart C—Packaging Materials for Irradiated Foods**

**§ 179.45 Packaging materials for use during the irradiation of pre-packaged foods.**

The packaging materials identified in this section may be safely subjected to irradiation incidental to the radiation treatment and processing of pre-packaged foods, subject to the provisions of this section and to the requirement that no induced radioactivity is detectable in the packaging material itself:

(a) The radiation of the food itself shall comply with regulations in this part.

(b) The following packaging materials may be subjected to a dose of radiation, not to exceed 10 kilograys, unless otherwise indicated, incidental to the use of gamma, electron beam, or X-radiation in the radiation treatment of prepackaged foods:

(1) Nitrocellulose-coated or vinylidene chloride copolymer-coated cellophane complying with §177.1200 of this chapter.

(2) Glassine paper complying with §176.170 of this chapter.

(3) Wax-coated paperboard complying with §176.170 of this chapter.

(4) Polyolefin film prepared from one or more of the basic olefin polymers complying with §177.1520 of this chapter. The finished film may contain:

(i) Adjuvant substances used in compliance with §§178.3740 and 181.22 through 181.30 of this chapter, sodium citrate, sodium lauryl sulfate, polyvinyl chloride, and materials as listed in paragraph (d)(2)(i) of this section.

(ii) Coatings comprising a vinylidene chloride copolymer containing a minimum of 85 percent vinylidene chloride with one or more of the following comonomers: Acrylic acid, acrylonitrile, itaconic acid, methyl acrylate, and methyl methacrylate.

(5) Kraft paper prepared from unbleached sulfate pulp to which rosin, complying with §178.3870 of this chapter, and alum may be added. The kraft paper is used only as a container for flour and is irradiated with a dose not exceeding 500 grays.

(6) Polyethylene terephthalate film prepared from the basic polymer as described in §177.1630(e)(4)(i) and (ii) of