

CHAPTER 16

FRUIT AND CROP RIPENING

SECTION 1601 GENERAL

1601.1 Scope. Ripening processes where ethylene gas is introduced into a room to promote the ripening of fruits, vegetables and other crops shall comply with this chapter.

Exception: Mixtures of ethylene and one or more inert gases in concentrations which prevent the gas from reaching greater than 25 percent of the lower explosive limit (LEL) when released to the atmosphere.

1601.2 Permits. Permits shall be required as set forth in Section 105.6.

1601.3 Ethylene generators. Approved ethylene generators shall be operated and maintained in accordance with Section 1606.

SECTION 1602 DEFINITIONS

1602.1 Terms defined in Chapter 2. Words and terms used in this chapter and defined in Chapter 2 shall have the meanings ascribed to them as defined therein.

SECTION 1603 ETHYLENE GAS

1603.1 Location. Ethylene gas shall be discharged only into approved rooms or enclosures designed and constructed for this purpose.

1603.2 Dispensing. Valves controlling discharge of ethylene shall provide positive and fail-closed control of flow and shall be set to limit the concentration of gas in air below 1,000 parts per million (ppm).

SECTION 1604 SOURCES OF IGNITION

1604.1 Ignition prevention. Sources of ignition shall be controlled or protected in accordance with this section and Chapter 3.

1604.2 Electrical wiring and equipment. Electrical wiring and equipment, including lighting fixtures, shall be approved for use in Class I, Division 2, Group C hazardous (classified) locations.

1604.3 Static electricity. Containers, piping and equipment used to dispense ethylene shall be bonded and grounded to prevent the discharge of static sparks or arcs.

1604.4 Lighting. Lighting shall be by approved electric lamps or fixtures only.

1604.5 Heating. Heating shall be by indirect means utilizing low-pressure steam, hot water, or warm air.

Exception: Electric or fuel-fired heaters approved for use in hazardous (classified) locations which are installed and operated in accordance with the applicable provisions of the *National Electrical Code*, the *International Mechanical Code* or the *Arizona State Plumbing Code*.

1604.6 Open flames and lights. Open-flame heaters and open lights shall not be located in ripening rooms.

1604.7 Smoking. NO SMOKING signs shall be posted at every entrance, and smoking shall be prohibited in the ripening rooms.

SECTION 1605 COMBUSTIBLE WASTE

1605.1 Housekeeping. Empty boxes, cartons, pallets and other combustible waste shall be removed from ripening rooms or enclosures and disposed of at regular intervals in accordance with Chapter 3.

SECTION 1606 ETHYLENE GENERATORS

1606.1 Ethylene generators. Ethylene generators shall be listed and labeled by an approved testing laboratory, approved by the fire code official and used only in approved rooms in accordance with the ethylene generator manufacturer's instructions. The listing evaluation shall include documentation that the concentration of ethylene gas does not exceed 25 percent of the lower explosive limit (LEL).

1606.2 Ethylene generator rooms. Ethylene generators shall be used in rooms having a volume of not less than 1,000 cubic feet (28 m³). Rooms shall have air circulation to ensure even distribution of ethylene gas and shall be free from sparks, open flames or other ignition sources.

SECTION 1607 WARNING SIGNS

1607.1 When required. Approved warning signs indicating the danger involved and necessary precautions shall be posted on all doors and entrances to the premises.

