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From Experience

Out of Control? A Look at Hazardous Chemicals and Control Areas

Many chemicals used for cleaning and sanitizing food and beverage facilities are corrosive or toxic in nature and are classified as hazardous materials. (See definitions in “Experience in Brief.”) The use and storage of these chemicals is regulated by current building and fire codes. These codes identify the maximum quantity allowed to be stored and also how these hazardous substances may be stored within a facility.

Health hazard chemicals must be stored within designated areas of a facility called control areas. These are spaces within a building that are enclosed and

bounded by exterior walls and/or fire-rated construction, where hazardous materials not exceeding the maximum allowable quantities are stored. The overall size of a control area is not limited: An entire facility can be considered one control area if the allowable quantities for one control area are not exceeded; however, the maximum number of control areas permitted in a typical one-story facility is four. Where multiple control areas are used, they are required to be separated from each other by no less than a one-hour fire barrier.

EXPERIENCE IN BRIEF

Corrosive: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the point of contact.

Health Hazard: A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term “health hazard” includes chemicals that are toxic, highly toxic, or corrosive.

Toxic: A chemical that has a median lethal dose as categorized by the building code.

Example of Hazardous Chemicals Regulated by Building and Fire Codes

Class 1 Oxidizer (Less than or equal to 27.5%)	AC-55, Excelerate HS and Oxonia Active
Corrosive Liquids	AC-55, AC-103, Excelerate HS, Oxonia Active, Enforce LP, Lift RT & Sulfuric Acid

The 2021 International Building Code allows up to 1000 gallons of corrosives and 100 gallons of toxic chemical within a control area. These quantities are assumed to be located within a facility that is equipped throughout with an automatic sprinkler system. Allowable quantities will decrease within a facility that is not fully sprinkled, but can be doubled if stored in approved storage cabinets.

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If the maximum storage quantities are exceeded within an individual room, area, or building defined as a single control area, the area designated for health hazard chemical storage no longer meets the defined limitations of a control area. In this case, it is required to be classified as a hazardous occupancy (H-4). An H-4 hazardous classification affects many aspects of the building design, including fire separation, personnel egress, and spill control and containment. These spaces require a fire barrier that can range from one- to four-hour and include a reduction in maximum egress travel distance and the installation of panic exit device door hardware. In addition, hazardous occupancies require spill control to eliminate the spread of liquid to adjacent areas, secondary containment sized to hold the largest vessel plus 20 minutes of fire sprinkler flow, and continuous ventilation and stand-by power as life safety components.

Proper storage of hazardous chemicals is a complex issue. Consult with a qualified architecture and engineering firm to determine how to best keep your facility in compliance.

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