

**APPENDIX B**

**SUMMARY OF THE MAXIMUM ALLOWABLE QUANTITY  
OF HAZARDOUS MATERIALS IN STORAGE PER FIRE CONTROL AREAa  
POSING A PHYSICAL OR HEALTH HAZARD**

Hazardous Material <sup>e</sup>	Class <sup>e</sup>	IBC Hazard Group <sup>f</sup> when Quantity is Exceeded	Maximum Allowable Quantity in Storage <sup>b</sup> per Fire Control Area in Accordance with the Uniform Fire Code <sup>c</sup> (UFC)			Maximum Allowable Quantity in Storage <sup>b</sup> per Fire Control Area in Accordance with the International Fire Code <sup>d</sup> (IFC)		
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet)
			Combustible liquid	II IIIA IIIB	H-2 or H-3 H-2 or H-3		120 <sup>h</sup> 330 <sup>h</sup> 13,200 <sup>h,i</sup>	
Combustible fiber	Loose Baled	H-3	(100) (1,000)			(100) (1,000)		
Consumer Fireworks (Class C, Common)	1.4G	H-3				125 <sup>g,h,q</sup>		
Cryogenics, flammable		H-2		45			45 <sup>g</sup>	
Cryogenics, Oxidizing		H-3		45			45 <sup>g</sup>	
Explosives		H-1	1 <sup>h</sup>	(1) <sup>h</sup>		1 <sup>h,j</sup>	(1) <sup>h,j</sup>	
Flammable gas	Gaseous	H-2			750 <sup>g,h</sup>			1,000 <sup>g,h</sup>
	Liquefied			15 <sup>g,h</sup>			30 <sup>g,h</sup>	
Flammable liquid	1A	H-2 or H-3		30 <sup>h</sup>			30 <sup>g,h</sup>	
	1B		60 <sup>h</sup>		60 <sup>g,h</sup>			
	1C		90 <sup>h</sup>		90 <sup>g,h</sup>			
Combination Flammable Liquid (1A,1B,1C)		H-2 or H-3		120 <sup>h</sup>			120 <sup>g,h,k</sup>	
Flammable solid		H-3	125 <sup>g,h</sup>			125 <sup>g,h</sup>		
Organic peroxide	UD	H-1	1 <sup>h,j</sup>	(1) <sup>h,j</sup>		1 <sup>h,i</sup>	(1) <sup>h,j</sup>	
	I	H-2	5 <sup>g,h</sup>	(5) <sup>g,h</sup>		5 <sup>g,h</sup>	(5) <sup>g,h</sup>	
	II	H-3	50 <sup>g,h</sup>	(50) <sup>g,h</sup>		50 <sup>g,h</sup>	(50) <sup>g,h</sup>	
	III	H-3	125 <sup>g,h</sup>	(125) <sup>g,h</sup>		125 <sup>g,h</sup>	(125) <sup>g,h</sup>	
	IV		500 <sup>g,h</sup>	(500) <sup>g,h</sup>		NL	NL	
V		NL	NL		NL	NL		
Oxidizer	4	H-1	1 <sup>h,j</sup>	(1) <sup>h,j</sup>		1 <sup>h,j</sup>	(1) <sup>h,j</sup>	
	3 <sup>j</sup>	H-2	10 <sup>g,h</sup>	(10) <sup>g,h</sup>		10 <sup>g,h</sup>	(10) <sup>g,h</sup>	
	2	H-3	250 <sup>g,h</sup>	(250) <sup>g,h</sup>		250 <sup>g,h</sup>	(250) <sup>g,h</sup>	
	1	H-3	4,000 <sup>g,h</sup>	(4,000) <sup>g,h</sup>		4,000 <sup>g,h</sup>	(4,000) <sup>g,h</sup>	
Oxidizing gas	Gaseous	H-3			1500 <sup>g,h</sup>			1500 <sup>g,h</sup>
	Liquefied			15 <sup>g,h</sup>			15 <sup>g,h</sup>	
Pyrophoric material		H-2	4 <sup>h,j</sup>	(4) <sup>h,j</sup>	50 <sup>h,j</sup>	4 <sup>h,j</sup>	(4) <sup>h,j</sup>	50 <sup>h,j</sup>
Unstable (reactive)	4	H-1	1 <sup>h,j</sup>	(1) <sup>h,j</sup>	10 <sup>h,j</sup>	1 <sup>h,j</sup>	(1) <sup>h,j</sup>	10 <sup>g,i</sup>
	3	H-1 or H-2	5 <sup>g,h</sup>	(5) <sup>g,h</sup>	50 <sup>g,h</sup>	5 <sup>g,h</sup>	(5) <sup>g,h</sup>	50 <sup>g,h</sup>
	2	H-3	50 <sup>g,h</sup>	(50) <sup>g,h</sup>	250 <sup>g,h</sup>	50 <sup>g,h</sup>	(50) <sup>g,h</sup>	250 <sup>g,h</sup>
	1		NL	NL	750 <sup>g,h</sup>	NL	NL	NL
Water reactive	3	H-2	5 <sup>g,h</sup>	(5) <sup>g,h</sup>		5 <sup>g,h</sup>	(5) <sup>g,h</sup>	
	2	H-3	50 <sup>g,h</sup>	(50) <sup>g,h</sup>		50 <sup>g,h</sup>	(50) <sup>g,h</sup>	
	1		125 <sup>h,i</sup>	(125) <sup>h,i</sup>		NL	NL	
Corrosive			5000 <sup>g,h</sup>	500 <sup>g,h</sup>	810 <sup>g,h</sup>	5000 <sup>g,h</sup>	500 <sup>g,h</sup>	810 <sup>g,o</sup>
Highly Toxic			10 <sup>g,h</sup>	(10) <sup>g,h</sup>	20 <sup>g,p</sup>	10 <sup>g,h</sup>	(10) <sup>g,h</sup>	20 <sup>g,p</sup>
Toxic			500 <sup>g,h</sup>	(500) <sup>g,h</sup>	810 <sup>g,h</sup>	500 <sup>g,h</sup>	(500) <sup>g,h</sup>	810 <sup>g,h</sup>
Irritants			NL	NL	810 <sup>g,h,i</sup>			
Sensitizers			NL	NL	810 <sup>g,h,i</sup>			
Other Health Hazards			NL	NL	810 <sup>g,h,i</sup>			

NL = Not Limited    SI equivalents: 1 cubic foot = 0.023 m<sup>3</sup>, 1 pound = 0.454 kg, 1 gallon = 3.785 L

## APPENDIX B

### SUMMARY OF THE MAXIMUM ALLOWABLE QUANTITY OF HAZARDOUS MATERIALS IN STORAGE PER FIRE CONTROL AREA<sub>a</sub> POSING A PHYSICAL OR HEALTH HAZARD

#### (CONTINUED)

- Notes:**
- a. A control area is a space within a building bounded by exterior walls, fire walls, fire barriers, and roofs, or a combination thereof, where hazardous materials are stored, dispensed, or handled in amounts not exceeding the maximum allowable quantities.
  - b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.
  - c. *Uniform Fire Code*, 1997, Article 80, Hazardous Materials, Section 8001, Tables 8001.15-C & 8001.15-D.
  - d. *International Fire Code*, 2000, Chapter 27, Hazardous Materials – General Provisions, Tables 2703.1.1(1) & 2703.1.1(2).
  - e. See definitions below.
  - f. Hazard groups are defined in the International Building Code, 2000, [F] Section 307, and require specific design criteria.
  - g. Maximum quantities shall be increased 100% for buildings equipped throughout with an automatic sprinkler system. Where note h applies, the increase for both shall be applied accumulatively.
  - h. Quantities shall be increased 100% when stored in approved cabinets, gas cabinets, exhausted enclosures, or safety cans as specified by the *International Fire Code*. Where note g applies, the increase for both shall be applied accumulatively.
  - i. The permitted quantities shall not be limited in buildings equipped throughout with an automatic sprinkler system and provided with exhaust ventilation.
  - j. Permitted only in building equipped throughout with an automatic sprinkler system.
  - k. Containing not more than the maximum allowable quantity per control area of Class 1A, 1B, or 1C flammable liquids.
  - l. Quantities in parentheses indicate quantity units in parentheses at the head of each column.
  - m. A maximum quantity of 200 pounds of solid or 20 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes.
  - n. Net weight of the pyrotechnic composition. Where net weight is unknown, 25% of the gross weight including packaging shall be used.
  - o. A single cylinder per control area containing 150 pounds of anhydrous ammonia shall be considered the maximum in and unsprinklered building or two cylinders containing 150 pounds each in a building equipped throughout with an automatic sprinkler system.
  - p. Allowed only when stored in approved exhausted gas cabinets or exhausted enclosures.
  - q. Net weight of the pyrotechnic composition. Where the net weight is unknown 25% of the gross weight shall be used including packaging.

#### Definitions:

- Combustible Liquids: Class II. Liquids having a closed cup flash point at or above 100°F (38°C) and below 140°F (60°C).  
Class IIIA. Liquids having a closed cup flash point at or above 140°F (60°C) and below 200°F (93°C).  
Class IIIB. Liquids having a closed cup flash point at or above 200°F (93°C).
- Flammable Liquids: Class IA. Liquids having a flash point below 73°F (23°C) and having a boiling point below 100°F (38°C).  
Class IB. Liquids having a flash point below 73°F (23°C) and having a boiling point above 100°F (38°C).  
Class IC. Liquids having a flash point at or above 73°F (23°C) and below 100°F (38°C).
- Highly Toxic:
- 1. A chemical that has a lethal dose (LD<sub>50</sub>) 50 mg/kg or less orally in rats.
  - 2. A chemical that has a lethal dose (LD<sub>50</sub>) 200 mg/kg or less by contact in rabbits.
  - 3. A chemical that has a lethal concentration (LC<sub>50</sub>) in air of 200 ppm (gas or vapor) or 2 mg/l (mist, fume, or dust) or less by inhalation in rats.
- Organic Peroxides:
- UD. Unclassified detonable. Organic peroxides that are capable of detonation. Extremely high explosion hazard through rapid explosive decomposition.
  - I. Formulations capable of deflagration but not detonation.
  - II. Formulations that burn very rapidly and pose a moderate reactivity hazard.
  - III. Formulations that burn rapidly and pose a moderate reactivity hazard.
  - IV. Formulations that burn in the same manner as ordinary combustibles and pose minimal reactivity hazards.

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### SUMMARY OF THE MAXIMUM ALLOWABLE QUANTITY OF HAZARDOUS MATERIALS IN STORAGE PER FIRE CONTROL AREA<sub>a</sub> POSING A PHYSICAL OR HEALTH HAZARD

(CONTINUED)

- V. Formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and pose no reactivity hazard.
- Oxidizers:
- Class 1. An oxidizer whose primary hazard is that it slightly increases the burning rate but does not cause spontaneous ignition when it comes in contact with combustible materials.
  - Class 2. An oxidizer that will cause a moderate increase in the burning rate or that causes spontaneous ignition when it comes in contact with combustible materials.
  - Class 3. An oxidizer that will cause a severe increase in the burning rate of combustibles with which it comes into contact or that will undergo vigorous self-sustained decomposition due to contamination or exposure to heat.
  - Class 4. An oxidizer that will undergo an explosive reaction due to contamination or exposure to thermal or physical shock and will enhance the burning rate and cause spontaneous ignition of combustibles.
- Toxic:
- 1. A chemical that has a lethal dose (LD<sub>50</sub>) 50 mg/kg but not more than 500 mg/kg orally in rats.
  - 2. A chemical that has a lethal dose (LD<sub>50</sub>) 200 mg/kg but not more than 1000 mg/kg by contact in rabbits.
  - 3. A chemical that has a lethal concentration (LC<sub>50</sub>) in air of more than 200 ppm (gas or vapor) or 2 mg/l (mist, fume, or dust) but not more than 2000 ppm (or 20 mg/l) by inhalation in rats.
- Unstable (reactive):
- Class 1. Materials that are normally stable but can become unstable at elevated temperatures and pressures.
  - Class 2. Materials that are normally unstable and readily undergo violent chemical change but do not detonate and includes materials that can undergo chemical change with the rapid release of energy at normal temperatures and pressures and that undergo violent chemical change at elevated temperatures and pressures.
  - Class 3. Materials capable of detonation or explosive decomposition or explosive reaction but require a strong initiating source or must be heated under confinement before initiation and includes materials sensitive to mechanical or localized thermal shock at elevated temperatures and pressures.
  - Class 4. Materials readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures and includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.
- Water reactive:
- Class 1. Materials that react with water with some release of energy but not violently.
  - Class 2. Materials that may form potentially explosive mixtures with water.
  - Class 3. Materials that react explosively with water without requiring heat or confinement.