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FIRE RESCUE DEPT.

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Flammable Storage – Permitting Process

Storage of combustible and flammable materials (flammables) can be an aspect of the Biotech business, as well as being an important safety concern for the company and the Wellesley Fire Department (WFD).

Purpose:

In addition to providing guidance regarding flammable storage, this bulletin provides updated information regarding the recent changes in flammable storage permitting and licensing requirements outlined in 527 CMR 14.03 (Massachusetts Fire Prevention Regulations for the Storage of Flammable and Combustible Materials).

There are a number of questions that you should ask yourself when either planning for the storage of or reviewing the current status of flammable storage at your facility:

1. How much combustible and flammable material can I store at my facility; and where can I store it in the facility?
2. How do I have to store it? (e.g., flammable storage cabinets, inside flammable storage rooms, etc.)
3. Am I prepared for an emergency involving flammables stored in the facility? Is there an emergency plan (emergency action plan, contingency plan, chemical hygiene plan) in place?
4. How do I obtain the proper permits and licenses for the storage of flammables?

We will try to address these questions.

Flammable and Combustible Materials:

Flammable and combustible materials are defined in the table below (taken from 527 CMR 14.02 - Massachusetts Fire Prevention Regulations):

Class IA Flammable Liquid	Liquid having a flash point below 73°F and boiling point below 100 °F
Class IB Flammable Liquid	Liquid having a flash point below 73 °F and boiling

	point at or above 100 °F
Class IC Flammable Liquid	Liquid having a flash point at or above 73 °F and below 100 °F
Class II Combustible Liquid	Liquid having flash point above 100 °F and below 140 °F (cont.)
Class IIIA Combustible Liquid	Liquid having flash point at or above 140 °F and below 200 °F
Class IIIB Combustible Liquid	Liquid having flash point above 200 °F
Flammable Gas	A mixture of 13% or less (by vol.) with air forms a flammable mixture or flammable range with air is wider than 12%
Flammable Solid	Solid, non-explosive, which is liable to cause fires through friction, absorption of moisture, spontaneous chemical change, or retained heat from processing

Note: many typical flammables, such as methanol, acetone, ethanol, and hexane, are Class I

Storing Flammables at Your Site:

Generally speaking, the design, construction, fire prevention systems, and location of an area in which flammable and combustible materials are to be stored at the facility will determine how much of each type of flammable and combustible materials you can store in that area. These limits are spelled out in the Massachusetts Building Code (780 CMR). Check out the details, e.g. Class I liquids cannot be stored in a basement location and the amounts allowed on a given floor (elevation) varies.

Once you have determined the amount and type of flammable and combustible materials you can store in the area, NFPA Codes (e.g., NFPA 30 – Flammable and Combustible Liquids Code) will tell you how you will need to store the materials (e.g., flammable storage cabinets, specially designed inside storage rooms, etc.). See Table A below.

Compliance with these codes will be reviewed before the WFD will issue flammable storage permits and sign-off on license applications.

Since these codes can be complex, it is a good idea to involve the WFD, the architect, and potentially a fire protection engineer upfront or during modifications in the design process for the space in question. It is difficult when construction is complete and you find you have to limit the material you can store due to code specifications or have to increase fire protection, etc. in order to store the amount of materials you wish.

Planning for Emergencies:

A large part of this process is your emergency preparedness. Your emergency plan(s) will be reviewed by the WFD before a permit will be issued or a sign-off on a flammable storage license application will be made.

You will need to:

1. Create and/or revise facility maps indicating hazardous material storage areas, evacuation routes, and emergency equipment;
2. Create and/or revise a list of flammable materials at the site;

3. Create emergency procedures to notify personnel of an emergency and what they should do (e.g., evacuation plan); and
4. Draft procedures to handle certain types of emergencies (e.g., fires, chemical spills, etc.)

At least annually, you need to review your emergency plans, maps and inventory. You need to inform the WFD of revisions and changes to your information, in order to ensure appropriate administrative follow up and emergency response. Permits are renewed annually via an on site inspection by the WFD, at which time you will be specifically asked about changes to your materials storage.

Flammable Storage Permitting & Licensing:

Storage/use of **any quantity** of flammable and combustible materials requires a **permit** from the WFD. The permit is issued for the entire facility or portion of the facility that the company occupies. If the quantities of materials to be stored exceed the limits in the table listed under Getting a License below (taken from 527 CMR 14.03), the facility is required to obtain a flammable storage (garage & gasoline) license from the Board of Fire Engineers and a **permit** issued by the WFD.

Getting a Permit:

*If your company will be storing and using flammable materials, you MUST apply for a flammable storage permit online at the Town of Wellesley website. **First time** applications will also need to include:*

1. A Chemical Hygiene Plan,

2. An Emergency Contingency Plan,

3. A Listing of the amounts of the various flammable and combustible liquids, (the list should be arranged by Classification and in gallons) flammable solids, and flammable gases showing their class and flash point, and

4. A site plan showing the storage locations for flammable and combustible materials.

(There may be additional requirements for flammable gas storage)

Once the application is in process the WFD will inspect the proposed storage area and either recommend changes or issue the permit.

Permits are renewed annually via an annual site inspection by the WFD, at which time you will be specifically asked about changes to your materials storage. There is a fee for initial and annual permits. The annual permit fee is currently $50.00.

Getting a License:

*If your company will be storing and using flammable materials in quantities exceeding those in the table below, you MUST apply for a flammable storage **License** (in addition to a flammable storage permit) with the Board of Fire Engineers or their designee.*

Maximum amounts without obtaining a license:

Category	Amount
Class I liquids (Containers < 60 gal.)	793 gallons
Class I liquids (Containers > 60 gallons, fixed installation, not intended for processing)	10,000 gallons
Class II liquids	10,000 gallons
Class IIIa liquids	10,000 gallons
Class IIIb liquids	10,000 gallons
Flammable gases (Within building)	3,000 cubic feet
Flammable gases	10,000 cubic feet
Flammable solids	100 pounds

Please contact The Office of Fire Prevention with any questions on the below information. Table A:

NFPA 30 *Flammable and Combustible Liquids Code*
Maximum Allowable Size of Containers and Metal Portable Containers
(from NFPA 30, Table 4-2.3, NFPA 45, Table 7.2.3.2)

Container Type	Class IA	Class IB	Class IC	Class II	Class III
Glass	1 pt (500 ml)	1 qt (1L)	1.1 gal (4 L)	1.1 gal (4 L)	5 gal (20L)
Metal (other than DOT drums) or approved plastic	1.1 gal (4L)	5 gal (20L)	5 gal (20L)	5 gal (20L)	5 gal (20L)
Safety cans	2.6 gal (10L)	5 gal (20L)	5 gal (20L)	5 gal (20L)	5 gal (20L)
Metal container (DOT spec.)	60 gal (227L)	60 gal (227L)	60 gal (227L)	60 gal (227L)	60 gal (227L)
Approved metal portable tanks	660 gal (2498L)	660 gal (2498L)	660 gal (2498L)	660 gal (2498L)	660 gal (2498L)
Polyethylene (DOT spec.34)	1.1 gal (4L)	5 gal (20L)	5 gal (20L)	60 gal (227L)	60 gal (227L)

Capacity of Storage Cabinets (NFPA 30, section 4.3)

4.3.1 Not more than 120 gal (454L) of Class I, Class II, and Class IIA liquids stored in a storage cabinet.

4.3.2 Not more than 3 (or 6 if sprinkler system per NFPA 13) storage cabinets located in any fire area. In an industrial occupancy, additional storage cabinets can be located in the same fire area if a minimum separation of 100 feet is maintained between each group of not more than 3 cabinets.

Liquid Handling, Transfer, and Use (NFPA 30, Section 5.4)

5.4.3.5 The maximum total quantity of flammable and combustible liquids permitted at any one work area, outside of an approved storage area must not exceed the greater of:

1. one day's supply;
2. 25 gallons (94.6L) of Class IA liquids;
3. 120 gallons (454.2 L) of Class IB, IC, II, or III liquids;
4. two portable tanks not exceeding 660 gallons (2498.4 L) of Class IB, IC, II, or IIIA liquid; or
5. 20 portable tanks each not exceeding 660 gal (2498L) of Class IIIB liquids.

**All applicants are required to follow the Fire Chiefs requirement of a third party reviewer as provided by 527 CMR 1. The applicant is responsible for the third party Fire Protection Engineer (FPE) as determined by the Fire Chief and must pay that vendor directly. The FPE represents the Fire Chief/Fire Department as our subject matter expert from the initial plan review to approval of final occupancy permit. The Fire Department reserves the right for final approval at the time of issuing a building permit with further review of the complete set of building documents.*