

Do I Need a Hazardous Materials Permit From The City of Des Moines, Fire Prevention Bureau?

If your company stores, handles, or uses any hazardous materials above quantities listed in Section 46-1 of the City of Des Moines Fire Prevention Code based on the International Fire Code amended by the City of Des Moines, it must obtain a permit from the Des Moines Fire Prevention Bureau. Attached is a Category List providing information about quantity thresholds that would require a permit.

If your business does not store, handle, or use any hazardous material above permit quantities, then sign the certification statement under the DECLARATION section attached to this form and return it to: Attn: HMIS Reporting, at the address indicated above. Nothing further will be required of your business.

The Permit Process:

First, complete the Hazardous Materials Permit Application.

Second, define the category of each hazardous material. These categories are described in the Hazardous Material Categories and Permit Quantities Guide. The Fire Marshal's Office can assist you in this categorization.

Third, use the information from the second step to assist you in completing the Hazardous Materials Inventory Sheet.

Hazardous Materials Classifications to be Reported

"PHYSICAL HAZARD": a chemical for which there is scientifically valid evidence that it is a (an):

Combustible liquid	Flammable gas	Oxidizer
Compressed gas	Flammable liquid	Unstable (reactive)
Cryogenic fluid	Flammable solid	Water-reactive
Explosive	Organic Peroxide	

"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, and corrosive.

**Des Moines Fire Department
Fire Prevention Bureau**

2715 Dean Avenue Des Moines, IA 50317 Phone 515.283.4240



DECLARATION

Our business does not store or use hazardous materials in excess of the City of Des Moines Fire Prevention Code permit quantities. I, the undersigned, understand what these permit quantities are. Please remove our name from the Fire Marshal's Hazardous Materials list. I certify that I have the authority and personal knowledge to make this representation and am either: 1) the corporation president; 2) an authorized partner of the business; or 3) the sole proprietor.

COMPANY NAME

ADDRESS

SIGNATURE OF AUTHORIZED PARTY

DATE

PRINTED NAME AND TITLE

***PLEASE WRITE A BRIEF DESCRIPTION OF WHAT HAS CHANGED AT YOUR BUSINESS,
WHICH ALLOWS YOU TO NO LONGER NEED THIS PERMIT:***

PLEASE RETURN THIS FORM TO:

HMIS REPORTING, DES MOINES FIRE DEPARTMENT,
2715 DEAN AVENUE, DES MOINES, IOWA 50317.

**Des Moines Fire Department
Fire Prevention Bureau**

2715 Dean Avenue Des Moines, IA 50317 Phone 515.283.4240



Please fill out the attached Hazardous Materials Inventory Statement.

BUSINESS NAME PHONE

FACILITY ADDRESS DES MOINES ZIP

MAILING ADDRESS ZIP

TYPE OF BUSINESS CONTACT PERSON

Our business does store or use hazardous materials in excess of the City of Des Moines Fire Prevention Code permit quantities. I, the undersigned, understand what these permit quantities are. Please see the attached Hazardous Materials Inventory Statement for a list of those hazardous materials. I certify that I have the authority and personal knowledge to make this representation and am either: 1) the corporation president; 2) an authorized partner of the business; or 3) the sole proprietor.

SIGNATURE OF AUTHORIZED PARTY DATE

PRINTED NAME TITLE

PLEASE RETURN THIS FORM TO: HMIS REPORTING, DES MOINES FIRE DEPARTMENT,
2715 DEAN AVENUE, DES MOINES, IA 50317

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Generally, laboratories, high tech processes, paint shops and stores, automotive repair shops and stores, warehouses, and retail stores to mention a few, have hazardous chemicals. The type and quantity of chemicals used or stored need to be assessed using an HMIS in conjunction with Chapter 50 and other chemical resources. **Reference: 2012 IFC 5001.5.2**

The information derived from an HMIS will assist the designer in determining the correct occupancy classification, method and location of storage, design criteria for spill and secondary containment, construction requirements, and ventilation needs.

If there is any possibility that hazardous chemicals will be in the building or used in a process within the building, the Fire Department will request an HMIS and possibly a hazardous materials management plan.

Provide Correct Information (Additional information for most of the columns is found in Appendix II-E)

1. Hazard class, column 1 of the HMIS is often not completed correctly. Many chemicals are multi-hazard class chemicals and every hazard class must be provided. For example, Trimethyl Phosphite is not just a corrosive acid, but also a combustible liquid II, other health hazard, and a class 1 water reactive. Include all classes for each chemical on the HMIS. See the Hazardous Materials Categories & Permit Quantities Guide for additional information and abbreviations.
2. Chemical name, column 3 of the HMIS; fire department requires the chemical concentration (%) to accompany each chemical and provide the chemical name not the formula.
3. The HMIS must be formatted to reflect separate chemical information and totals for each area or room, not a consolidated report.
4. For each storage or use area or room, provide accumulative totals for each hazard class and for each respective chemical state solid, liquid, and gas.

Sample: Location: Room 275

USE: Storage for Manufacturing Process

1	2	3	4	5	6	7	8	9	10	11	12
Hazard Classes	Trade Name	Chem Name, & %	CAS; Abstract No.	State (G/S/L)	Open Use	Closed Use	Quantity	Unit (lbs. or gal)	Storage Code	NFPA	Location of Chemical in the Building
FLM 1B, Irritant	Isopropanol	Isopropanol Alco. 99%	67-63-0	PL	X		300	gal	L-1-4	1-3-0	Room 275
FLM 1B, OHH, WR-2	TMB	Trimethyl Borate 100%	121-43-7	PL		X	30	gal	L-2-4	2-1-3 WR	Room 275
Totals Below (for each separate hazard class)											
FLM 1B							330				
Irritant							300				
OHH							30				
WR-2							30				

5. Declare if the chemical in use is in an open or closed condition, column 6 and 7.

Use (material) is:

1. Placing a material into action, including solids, liquids, and gases, or,
2. Making a material available for service by opening or connecting anything utilized for confinement of material including solids, liquids, and gases.

Use, closed system, is the use of a solid or liquid hazardous material in a closed vessel or system that remains closed during normal operations where vapors emitted by the product are not liberated outside of the vessel or system and the product is not exposed to the atmosphere during normal operations. All compressed gases meet this criteria. Examples of closed systems for solids and liquids include reaction process operations and product conveyed through a piping system into a closed vessel, system or piece of equipment.

Use, open system, is use of a solid or liquid hazardous material in a vessel or system that is continuously open to the atmosphere during normal operations and where vapors are liberated, or the product is exposed to the atmosphere during normal operations. Examples of open systems for solids and liquids include dispensing from or into open beakers or containers, and dip tank and plating operations.

6. **Use the blank form:** found on the next page. Pages following the blank form are part of the Hazardous Materials Categories & Permit Quantities Guide. The forms provide permit amount information; transfer that information to the blank form. Legends for columns 5-State, 9-Unit, 11-Storage, 12 -NFPA are on the Hazardous Materials Inventory Statement blank form



HAZARDOUS MATERIALS INVENTORY STATEMENT (HMIS)



Business Name: _____ Occupancy Classification (H-1, M, etc): _____

Business Address: _____ Sprinklered throughout?: Y N

Business Contact: _____ Phone: (____) _____ Report Prepared by: _____ Phone: (____) _____

1	2	3	4	5	6	7	8	9	10	11	12
Hazard Classes	Trade Name	Chem Name, & %	CAS; Abstract No.	State (G/S/L)	Open Use	Closed Use	Quantity	Unit (lbs. or gal)	Storage Code	NFPA	Location of Chemical in the Building
Totals Below (for each separate hazard class)											

Columns: 1-Hazard Class: See the Hazardous Materials Categories & Permit Quantities Guide for hazard class abbreviations (noted in parenthesis)
 Examples: Oxidizer 1, 2, 3, or 4 (OX1); Flammable Liquid IA, IB, or IC (FLM 1C); Explosive (EXP); Unstable Reactive 1, 2, 3, or 4 (UR3)
 5-State: A description of each material, more than one may apply. P= Pure; M= Mixture; S= Solid; L= Liquid; G= Gases
 9-Unit: LBS= pounds; GAL=gallons; CF= cubic feet
 10-Storage: **Type, Pressure, and Temperature** (put combined code in this order on form)
Type: A = above ground tank, B = below ground tank, C = tank in building, D = steel drum, E = plastic/nonmetal drum, F = can, G = carboy, H = silo, I = fiber bag, J = bag, K = box, L = cylinder, M = glass bottle/jug, N = plastic bottle/jug, O = toe bin, P = tank wagon, Q = rail car, R = other
Pressure: 1 = ambient (atmospheric), 2 = greater than ambient (atmospheric), 3 = less than ambient (atmospheric)
Temperature: 4 = ambient, 5 = greater than ambient, 6 = less than ambient but not cryogenic, 7 = cryogenic conditions
 11-NFPA: Health: 0-4, Fire: 0-4, Reactivity: 0-4, Special: W (water reactive), OX (oxidizer), COR (corrosive), Example: 2-3-0-W

The 2012 International Fire Code (IFC) defines Hazardous Materials as chemicals or substances that pose physical or health hazards according to classifications. These classifications and associated permit quantities in Des Moines Hazardous Materials Program are described below. Hazardous Materials include hazardous substances, hazardous wastes, and any other materials that a handler or the fire department has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released.

Compressed Gases

A material, or mixture of materials, which: is a gas at 68°F or less at 14.7 psia of pressure; and has a boiling point of 68°F or less at 14.7 psia which is either liquefied, nonliquefied or in solution, except those gases which have no other health- or physical-hazard properties are not considered to be compressed until the pressure in the packaging exceeds 41 psia at 68°F. The states of a compressed gas are categorized as follows:

- (1) Nonliquefied compressed gases are gases, other than those in solution, which are in a packaging under the charged pressure and are entirely gaseous at a temperature of 68°F.
- (2) Liquefied compressed gases are gases that, in a packaging under the charged pressure, are partially liquid at a temperature of 68°F.
- (3) Compressed gases in solution are nonliquefied gases that are dissolved in a solvent.
- (4) Compressed gas mixtures consist of a mixture of two or more compressed gases contained in a packaging, the hazard properties of which are represented by the properties of the mixture as a whole.

TYPE OF COMPRESSED GAS	DSM PERMIT QUANTITY
Flammable (except LPG) (FG)	200 cubic feet
Oxidizing (including oxygen) (OG)	3,000 cubic feet
Non-flammable (carbon dioxide, nitrogen, etc) (IG)	6,000 cubic feet
Liquefied petroleum gas (LPG)	150 gallons
Corrosive or Toxic (CR, TX)	1,000 cubic feet
Highly toxic, radioactive, or reactive (HT, RD, RE)	500 cubic feet

Corrosive Liquids and Solids

Corrosive substances cause visible destruction of, or irreversible alteration in, living tissue by chemical action at the point of contact.

TYPE OF CORROSIVE	DSM PERMIT QUANTITY
Corrosive liquid (COR)	55 gallons
Corrosive solid (COR)	1000 pounds

Cryogenic Fluids

Cryogenic fluids, or cryogenics, are liquids with normal boiling points lower than -130°F.

TYPE OF CRYOGENIC	INDOORS (gallons)	OUTDOORS (gallons)
Flammable	More than 1	60
Inert	60	500
Oxidizing (includes oxygen)	10	50
Physical or Health Hazard not indicated above	Any Amount	

Explosives, Ammunition and Blasting Agents

A chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion. The term includes, but is not limited to, dynamite, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, igniters and display fireworks, 1.3G (Class B Special). The term “explosive” includes any material determined to be within the scope of USC Title 18: Chapter 40 and also includes any material classified as an explosive other than consumer fireworks, 1.4G (Class C, Common) by the hazardous materials regulations of DOT 49 CFR.

- A permit is required for the storage of any amount of explosives and blasting agents. (EXP)
- A permit is required to store or sell: small arms ammunition, small arms primers, smokeless propellants, and black rifle powder. (AMM)

Flammable and Combustible Liquids

Class I-A flammable liquids have a flash point below 73° F and a boiling point below 100° F;
Class I-B flammable liquids have a flash point below 73° F and a boiling point at or above 100° F;
Class I-C flammable liquids have a flash point at or above 73° F and below 100° F.
Class II combustible liquids have a closed cup flash point at or above 100°F and below 140° F;
Class III-A combustible liquids have a flash point at or above 140° F and below 200° F;
Class III-B combustible liquids have a flash point at or above 200° F.

TYPE OF LIQUID	INDOORS (gallons)	OUTDOORS (gallons)
Class I	5	10
Class II	25	60
Class III-A	25	60
Class III-B	No permit needed for storage or use	

An operational permit is required:

1. To use or operate a pipeline for the transportation within facilities of flammable or *combustible liquids*. This requirement shall not apply to the off-site transportation in pipelines regulated by the Department of Transportation (DOTn) nor does it apply to piping systems.

2. To store, handle or use Class I liquids in excess of 5 gallons (19 L) in a building or in excess of 10 gallons (37.9 L) outside of a building, except that a permit is not required for the following:

2.1. The storage or use of Class I liquids in the fuel tank of a motor vehicle, aircraft, motorboat, mobile power plant or mobile heating plant, unless such storage, in the opinion of the *fire code official*, would cause an unsafe condition.

2.2. The storage or use of paints, oils, varnishes or similar flammable mixtures when such liquids are stored for maintenance, painting or similar purposes for a period of not more than 30 days.

3. To store, handle or use Class II or Class IIIA liquids in excess of 25 gallons (95 L) in a building or in excess of 60 gallons (227 L) outside a building, except for fuel oil used in connection with oil-burning equipment.

4. To store, handle or use Class IIIB liquids in tanks or portable tanks for fueling motor vehicles at motor fuel-dispensing facilities or where connected to fuel-burning equipment.

Exception: Fuel oil and used motor oil used for space heating or water heating.

5. To remove Class I or II liquids from an underground storage tank used for fueling motor vehicles by any means other than the *approved*, stationary on-site pumps normally used for dispensing purposes.

6. To operate tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and *combustible liquids* are produced, processed, transported, stored, dispensed or used.

7. To place temporarily out of service (for more than 90 days) an underground, protected above-ground or above-ground flammable or *combustible liquid* tank.

8. To change the type of contents stored in a flammable or *combustible liquid* tank to a material that poses a greater hazard than that for which the tank was designed and constructed.

9. To manufacture, process, blend or refine flammable or *combustible liquids*.

10. To engage in the dispensing of liquid fuels into the fuel tanks of motor vehicles at commercial, industrial, governmental or manufacturing establishments.

11. To utilize a site for the dispensing of liquid fuels from tank vehicles into the fuel tanks of motor vehicles, marine craft and other special equipment at commercial, industrial, governmental or manufacturing establishments.

Flammable Solids

A solid, other than a blasting agent or explosive, that is capable of causing fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which has an ignition temperature below 212°F or which burns so vigorously and persistently when ignited as to create a serious hazard. Flammable solids (FLM) include finely divided materials that when dispersed in air as a cloud or dust may be ignited and cause an explosion.

TYPE OF FLAMMABLE SOLID	DSM PERMIT QUANTITY
General, including wood dust and flour and flammable metals	100 pounds

Oxidizer Liquids and Solids

A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials. Examples of other oxidizing gases include bromine, chlorine, and fluorine. Oxidizing liquids and solids are grouped according to how fast they oxidize other materials, from Class I (lowest rate of oxidation) to Class 4 (most explosive rate of oxidation):

Class 1 oxidizers, an oxidizer whose primary hazard is that it slightly increases the burning rate but which does not cause spontaneous ignition when it comes in contact with combustible materials.

Class 2 oxidizers, an oxidizer that will cause a moderate increase in the burning rate or that causes spontaneous ignition of combustible materials with which it comes in contact.

Class 3 oxidizers, an oxidizer that will cause a severe increase in the burning rate of combustible materials with which it comes in contact or that will undergo vigorous self-sustained decomposition caused by contamination or exposure to heat.

Class 4 oxidizers, an oxidizer that can undergo an explosive reaction due to contamination or exposure to thermal or physical shock. In addition, the oxidizer will enhance the burning rate and can cause spontaneous ignition of combustibles.

TYPE OF OXIDIZER	LIQUID (gallons)	SOLID (pounds)
Class 1	55	500
Class 2	10	100
Class 3	1	10
Class 4	ANY AMOUNT	

Any amount of Oxidizing gas requires a permit.

Organic Peroxides

Organic peroxides can present an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time.

Class I organic peroxides are capable of deflagration, but not detonation.

Class II organic peroxides burn very rapidly and present a moderate reactivity hazard.

Class III organic peroxides burn rapidly and present a moderate reactivity hazard.

Class IV organic peroxides burn in the same manner as ordinary combustibles and present a minimal reactivity hazard.

Class V organic peroxides burn with less intensity than ordinary combustibles or do not sustain combustion or pose no reactivity hazard.

Unclassified detonable, an organic peroxide that is capable of detonation. These peroxides pose an extremely high-explosion hazard through rapid explosive decomposition.

TYPE OF ORGANIC PEROXIDE	LIQUID (gallons)	SOLID (pounds)
Class I & Class II	Any Amount	
Class III	1	10
Class IV	2	20
Class V	No permit needed for storage or use	

Toxic and Highly Toxic Liquids and Solids

According to Section 202 of the IFC, a toxic material is a material falling within any of the following categories:

(1) A chemical that has a median lethal dose (LD50) of more than 50 milligrams per kilogram, but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(2) A chemical that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

(3) A chemical that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than 2 milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for 1 hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Also, according to Section 202 of the IFC, a highly toxic material produces a lethal dose or lethal concentration which falls within any of the following categories:

(1) A chemical that has a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(2) A chemical that has a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between 2 and 3 kilograms each.

(3) A chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume or dust, when administered

by continuous inhalation for one hour (or less if death occurs within 1 hour) to albino rats weighing between 200 and 300 grams each.

Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.

TYPE OF TOXIN	LIQUID (gallons)	SOLID (pounds)
TOXIC	10	100
HIGHLY TOXIC	ANY AMOUNTS	

Unstable (Reactive) Liquids and Solids

These are materials other than explosives, which in the pure state or as commercially produced, will vigorously polymerize, decompose, condense, or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction, or shock, or in the absence of an inhibitor, or in the presence of contaminants, or in contact with incompatible materials. Unstable (reactive) materials are subdivided as follows:

Class 1 unstable materials are materials that in themselves are normally stable but which can become unstable at elevated temperatures and pressure (ETP).

Class 2 unstable materials are materials that in themselves are normally unstable and readily undergo violent chemical change but do not detonate. This class includes materials that can undergo chemical change with rapid release of energy at normal temperatures and pressures (NTP), and that can undergo violent chemical change at elevated temperatures and pressures.

Class 3 unstable materials are materials that in themselves are capable of detonation or of explosive decomposition or explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. This class includes materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures.

Class 4 unstable materials are materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. This class includes materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures.

TYPE OF UNSTABLE (REACTIVE) MATERIAL	LIQUID (gallons)	SOLID (pounds)
Class 1	10	100
Class 2	5	50
Class 3 & Class 4	ANY AMOUNT	

Water-Reactive Liquids and Solids

These are materials that explode; violently react; produce flammable, toxic or other hazardous gases; or evolve enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture. Water-reactive materials are subdivided as follows:

Class 1 water-reactives are materials that react with water with some release of energy, but not violently.

Class 2 water-reactives are materials that react violently with water or have the ability to boil water, and that produce flammable, toxic or other hazardous gases, or evolve enough heat to cause autoignition or ignition of combustibles upon exposure to water or moisture.

Class 3 water-reactives are materials that react explosively with water without requiring heat or confinement.

TYPE OF WATER REACTIVE MATERIAL	LIQUID (gallons)	SOLID (pounds)
Class 1	55	500
Class 2	55	500
Class 3	ANY AMOUNT	