# CHAPTER 5
# EXHAUST SYSTEMS

**SECTION 510.2**
**2009 Edition**
**IMC Interpretation 02-11**
**Issued 7-13-2011**
ME_09_02_11

**510.2 Where required.** A hazardous exhaust system shall be required wherever operations involving the handling or processing of hazardous materials, in the absence of such exhaust systems and under normal operating conditions, have the potential to create one of the following conditions:

1. A flammable vapor, gas, fume, mist or dust is present in concentrations exceeding 25 percent of the lower flammability limit of the substance for the expected room temperature.

2. A vapor, gas, fume, mist or dust with a health-hazard rating of 4 is present in any concentration.

3. A vapor, gas, fume, mist or dust with a health-hazard rating of 1, 2 or 3 is present in concentrations exceeding 1 percent of the median lethal concentration of the substance for acute inhalation toxicity.

**Exception:** Laboratories, as defined in Section 510.1, except where the concentrations listed in Item 1 are exceeded or a vapor, gas, fume, mist or dust with a health-hazard rating of 1, 2, 3 or 4 is present in concentrations exceeding 1 percent of the median lethal concentration of the substance for acute inhalation toxicity.

**REFERENCED SECTION:**

**2009 INTERNATIONAL FIRE CODE**

**SECTION 202**
**GENERAL DEFINITIONS**

**OPEN SYSTEM.** The use of a solid or liquid hazardous material involving 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, dip tank and plating tank operations.

• • • • • • • • • • •

**Q:** It is given that without an exhaust hood, the threshold concentrations of hazardous materials specified in Section 510.2 would be exceeded if an open system experiment was conducted on an ordinary laboratory bench. Are laboratory exhaust hoods and their associated ductwork and blowers considered a hazardous exhaust system when capturing hazardous vapors and gases from open systems or open containers within the hood?

**A:** Yes. The determination of whether an exhaust system must comply with the requirements for hazardous exhaust systems is to be based on the absence of such system. The exhaust hoods and their associated ductwork and blowers are considered to be a hazardous exhaust system because without the exhaust system the threshold concentrations specified in Section 510.2 would be exceeded.

---