

No. 13: Hazardous Materials - Part 2

Introduction

In Firehouse.com Weekly Drill No. 12, we touched on some of the laws and standards that affect our response and operations at hazardous materials incidents. This week we are going to look at the nine different hazard classes.

To help us better understand hazardous materials let's look at some of the definitions used by different agencies.

Department of Transportation (DOT)

Hazardous Materials are "any substance or material in any form or quantity which poses an unreasonable risk to safety and health and to property when transported in commerce."

Environmental Protection Agency (EPA)

"Any material which when discharged into the environment may be harmful to the public health or welfare of the United States" and "Any material that may pose an unreasonable risk to health, safety, or property when transported in commerce for the purposes of treatment, storage or disposal of as waste."

Ludwig Benner Jr., Hazmat Specialist at National Transportation Safety Board (NTSB)

Substance that jumps out of its container at you when something goes wrong and hurts or harms the things it touches.

Classes of Hazardous Materials

Class 1 - Hazards are Explosives: An explosive is any compound, mixture, or device. The primary or common purpose of which is to function by explosion, i.e., with substantially instantaneous release of gas and heat.

Class 2 - Hazards are gases: A compressed gas is any material or mixture having in the container an absolute pressure exceeding 40 psi at 70°F or, regardless of the pressure at 70°F, having an absolute pressure exceeding 104 psi at 130°F; or any liquid flammable material having a vapor pressure exceeding 40 psi absolute at 100°F

Class 3 - Hazards are Flammable & Combustible Liquids: A flammable liquid is any liquid having a flash point below 100°F A combustible liquid is any liquid that does not meet the definition of flammable or pyrophoric and has a flash point at or above 100°F and below 200°F



Class 4 - Hazards are Flammable Solids: A flammable solid is any material (other than an explosive) which under conditions normally incidental to transportation is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily and burns vigorously.

Class 5 - Hazards are Oxidizer & Organic Peroxides: Oxidizers yield oxygen readily to stimulate the combustion of organic matter. Organic Peroxides are compounds containing the bivalent -O-O- structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by an organic radical.

Class 6 - Hazards are Toxic Material or Infectious Substance: Poison/poisonous is synonymous with Toxic Any gas or liquid of such nature that a very small amount mixed with air is dangerous to life.

Class 7 - Hazards are Radioactive Materials Is any material or combination of materials which spontaneously emit ionizing radiation.

Class 8 - Hazards are Corrosives A liquid or solid material that causes visible destruction or irreversible alteration in the human skin tissue at the site of contact or a liquid that has a severe corrosive rate on steel.

Class 9 - Hazards are Miscellaneous Dangerous Goods Any freight container, motor vehicle, or rail car containing two or more classes of material requiring different placards may be placarded with a dangerous placard or a miscellaneous placard in place of a specific placard for each of the hazard classes.

-Prepared by Russell Merrick/Firehouse.com