Types of Reactive Chemicals

Spontaneously Combustible

- React with oxygen and burn without an ignition source.
- Pyrophoric materials ignite spontaneously on exposure to air.
- Department of Transportation (DOT) Hazard Class 4.2, labeled SPONTANEOUSLY COMBUSTIBLE.
- National Fire Protection Association (NFPA) diamond-red (top) quadrant rating-4.
- Containers must remain closed and be airtight and watertight.

Peroxide Formers

- React with oxygen to form unstable peroxides, which might explosively decompose.
- Often identified by another characteristic, such as flammability, for storage and shipping purposes.
- Causes of uncontrolled peroxide forming reactions: material stored beyond shelf life, insufficient stabilizer/inhibitor added, leak or spill of the substance, opening the container and allowing in air, etc.

Water Reactives

- Substances that will chemically react with water, causing thermal burn, igniting combustibles, giving off corrosive and toxic gases.
- DOT Hazard Class 4.3, labeled as DANGEROUS WHEN WET.
- NFPA diamond-white (bottom) quadrant-W.
- HazCom flame pictogram for water reactive.
- Avoid inadvertent contact with water, humidity in air, etc.

Oxidizers

- Yield oxygen or promote combustion of combustible materials.
- DOT Hazard Class 5.1, labeled as OXIDIZERS.
- NFPA diamond-white (bottom) quadrant-OX.
- HazCom flame over circle pictogram for oxidizers.
- Store away from combustibles such as oil, gasoline, and solvents.

Self-Reactive Materials

- Will self-react, often with accelerating or explosive rapidity.
- DOT Class 1-Explosives and Class 5.2-Organic peroxides.
- NFPA diamond-yellow (right) quadrant-rating between 1 and 4.
- HazCom exploding bomb pictogram for self-reactive and organic peroxides.
- Avoid mechanical shock, friction, spark, or heat.