

Types of Reactive Chemicals

Spontaneously Combustible

- Spontaneously combustible substances react with oxygen and burn without an ignition source.
- Pyrophoric materials ignite spontaneously on exposure to air.
- **DOT Hazard Class 4.2** and labeled as **SPONTANEOUSLY COMBUSTIBLE**.
- **NFPA diamond-red (top) quadrant rating-4**.
- Ensure containers of spontaneously combustible materials remain closed and are airtight and watertight.

Peroxide Formers

- Peroxide formers react with oxygen to form unstable peroxides, which might explosively decompose.
- Peroxide formers are 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

- Water reactives are substances that will chemically react with water, causing thermal burn, igniting combustibles, giving off corrosive and toxic gases.
- **DOT Hazard Class 4.3** and 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

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

Self-Reactive Materials

- 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.