

LOSS CONTROL DATA GUIDE

Oxidizer Safety

Oxidizing chemicals may cause severe fires and explosions.

Oxidizers spontaneously evolve oxygen at room temperature or with slight heating thus significantly increasing the burning of ordinary materials. Reactions of oxidizers with other materials including other oxidizers may cause fire or violent explosion.

Classes of oxidizers

For purposes of Hazard Identification Oxidizers are classified as follows: The Hazard Class is noted at the bottom of the warning label shown above.

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| <u>Class 1</u> | Causes slight increase in burning rate, no spontaneous ignition. |
| <u>Class 2</u> | Causes moderate increase in burning rate. May cause spontaneous ignition of combustibles. |
| <u>Class 3</u> | Severe increase in burning rate. Vigorous burning due to contamination or exposure to heat. |
| <u>Class 4</u> | Reacts explosively to contamination, exposure to heat, or physical shock. Causes spontaneous ignition of combustibles. |

How to prevent fire and explosion

Losses involving Oxidizers can be prevented by a few basic actions.

- Follow Manufacturers Precautions. Individual products have unique characteristics and protective requirements. Check Material Safety Data Sheets (MSDS) for information.
- Combustible Building Components can absorb Liquid Oxidizers. As the component dries, rapid oxidation progressing to fire can ensue. Use and



store Oxidizers in noncombustible buildings, or sections of buildings.

- Oxidizers Cause Spontaneous Combustion of paper, wood and other combustibles. Good Housekeeping is essential. Trash that becomes wet with oxidizer should be safely stored outside of the building.
- Explosions and other violent reactions may result from contact with a variety of substances, including other Oxidizers* acids, caustics, solvents, and similar materials. These should be segregated from oxidizers. Consult Material Safety Data sheet for precautions.
 *(Triazinetriones and Hypochlorites are examples of incompatible Oxidizers.)
- Storage should also be segregated from processes or operations. Larger quantities of storage or more hazardous classes of storage should be in a cut off room or separate storage building.

Typical Oxidizers, pure material unless referenced.

Typical Class 1 Oxidizers

All Inorganic nitrates (unless otherwise classified)
 All Inorganic nitrites (unless otherwise classified)
 Ammonium persulfate
 Barium peroxide
 Calcium peroxide
 Hydrogen peroxide solutions (greater than 8% up to 27.5%)
 Lead dioxide
 Lithium hypochlorite (39% or less available chlorine)
 Lithium peroxide
 Magnesium peroxide
 Manganese dioxide
 Nitric acid (40% concentration or less)
 Perchloric acid solutions (less than 50% by weight)
 Potassium dichromate
 Potassium percarbonate
 Potassium persulfate
 Sodium carbonate peroxide
 Sodium dichloro-s-triazinetrione dihydrate
 Sodium dichromate
 Sodium perborate (anhydrous)
 Sodium perborate monohydrate
 Sodium perborate tetrahydrate
 Sodium percarbonate
 Sodium persulfate
 Strontium peroxide
 Zinc peroxide

Typical Class 2 Oxidizers

Barium bromate
 Barium chlorate
 Barium hypochlorite
 Barium perchlorate
 Barium permanganate
 1-Bromo-3-chloro-5,5-dimethylhydantoin
 Calcium chlorate
 Calcium chlorite
 Calcium hypochlorite (50% or less by weight)
 Calcium perchlorate
 Calcium permanganate
 Chromium trioxide (Chromic acid)
 Copper chlorate
 Halane (1,3-Dichloro-5,5-dimethylhydantoin)
 Hydrogen peroxide (greater than 27.5% up to 52% percent)
 Lead perchlorate
 Lithium chlorate
 Lithium hypochlorite (more than 39% available chlorine)
 Lithium perchlorate
 Magnesium bromate
 Magnesium chlorate

Magnesium perchlorate
 Mercurous chlorate
 Nitric acid (more than 40% but less than 86%)
 Perchloric acid solutions (more than 50% but less 60%)
 Potassium perchlorate
 Potassium permanganate
 Potassium peroxide
 Potassium superoxide
 Silver peroxide
 Sodium chlorite (40% or less by weight)
 Sodium perchlorate
 Sodium perchlorate monohydrate
 Sodium permanganate
 Sodium peroxide
 Strontium chlorate
 Strontium perchlorate
 Strontium peroxide
 Thallium chlorate
 Trichloro-s-triazinetrione (Trichloroisocyanuric acid)
 Urea hydrogen peroxide
 Zinc bromate
 Zinc chlorate
 Zinc permanganate

Typical Class 3 Oxidizers

Ammonium dichromate
 Calcium hypochlorite (over 50% by weight)
 Chloric acid (10% maximum concentration)
 Hydrogen peroxide solutions (greater than 52% up to 91%)
 Mono-(trichloro)-tetra-(monopotassium dichloro)-penta-s-triazinetrione
 Nitric acid, fuming (more than 86% concentration)
 Perchloric acid solutions (60% to 72% by weight)
 Potassium bromate
 Potassium chlorate
 Potassium dichloro-s-triazinetrione (Potassium dichloroiso-cyanurate)
 Sodium bromate
 Sodium chlorate
 Sodium chlorite (over 40% by weight)
 Sodium dichloro-s-triazinetrione (sodium dichloroisocyanurate)

Typical Class 4 Oxidizers

Ammonium perchlorate (particle size greater than 15 microns)
 Ammonium permanganate
 Guanidine nitrate
 Hydrogen peroxide solutions (greater than 91%)
 Tetranitromethane

The loss prevention information and advice presented in this brochure are intended only to advise our insureds and their managers of a variety of methods and strategies based on generally accepted safe practices, for controlling potentially loss producing situations commonly occurring in business premises and/or operations. They are not intended to warrant that all potential hazards or conditions have been evaluated or can be controlled. They are not intended as an offer to write insurance coverage for such conditions or exposures, or to imply that Great American Insurance Company will write such coverage. The liability of Great American Insurance Company is limited to the specific terms, limits and conditions of the insurance policies issued.