

SOP Oxidizers

Purdue University Physics Department PRIME Lab
Applicable rooms: All PRIME Lab areas

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INTRODUCTION

Oxidizers are materials which readily yield oxygen or another oxidizing gas, or that readily react to promote or initiate combustion of flammable/combustible materials. Oxidation reactions are a frequent cause of chemical accidents.

HAZARDS

Contact with other materials may cause a fire or explosion
Some oxidizers have additional hazards, for example nitric acid is also a strong acid
Fires caused by oxidizers may produce toxic fumes
Many oxidizers are also toxic

PROCEDURES

- 1 Read and understand the MSDS or SDS for any chemicals to be used before starting work.
- 2 Know the reactivity of the materials involved in experiment or process
- 3 Eliminate extraneous materials in the area which could become involved in a reaction
- 4 If the reaction can be violent or explosive, use shields or other methods for isolating the materials or the process
- 5 Use the minimum amounts necessary for the procedure
- 6 Do not keep excessive amounts of the material in the vicinity of the process
- 7 Appropriate PPE and engineering controls must be used
- 8 Perchloric acid should be used only in specially-designed Perchloric acid fume hoods

MINIMUM PPE REQUIREMENTS

- 1 There must be a working safety shower and eye wash station in the work area
- 2 Skin cover to throat/wrists/ankles including required lab coat
- 3 Closed shoes
- 4 Chemical resistant gloves appropriate for the material used
- 5 Eye protection
 - Volume < 15 mL of aqueous solutions - Safety glasses with side shields
 - Volume > 15 mL ≤ 1 L of aqueous solutions - Splash goggles or safety glasses with side shields and face shield
 - Volume > 1L of aqueous solutions - Safety glasses with side shields and face shield or work in hood
 - Solids or non-aqueous solutions - Safety glasses with side shields and face shield or work in hood
- 6 Work in hood if volatile materials are used or if toxic gasses may be evolved in the process
- 7 Use blast shields if energetic reactions are possible
- 8 Any additional requirements of hazard certification in room where work is done

SOP

Oxidizers

STORAGE

- 1 Store away from flammable materials, organic materials, and reducing agents
- 2 Segregation may be achieved by distance or secondary containment
- 3 Store in a cool dry place
- 4 Do not store excessive quantities of materials

DISPOSAL

- 1 All chemical waste must be handled as specified in chapter 7 of the CHP
- 2 All hazardous chemical waste must be placed in appropriate closed containers
- 3 Containers must be properly labeled immediately
- 4 Most acids or bases may not be disposed of in the sink
- 5 REM will provide for disposal of all waste chemicals

EMERGENCY PROCEDURES

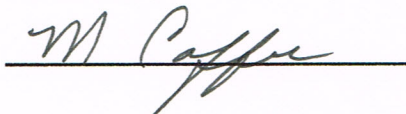
- 1 Spills should be handled as specified in chapter 8 of the CHP and the MSDS of SDS
- 2 Skin or eye contact should be washed with water immediately using an emergency shower or eye wash for at least 15 minutes unless otherwise indicated in MSDS or SDS.
- 3 Skin or eye contact should continue to be treated as specified in the MSDS or SDS
- 4 For any eye injury or significant other injuries Purdue EMS should be called immediately.
- 5 All injuries must be treated as specified in section 6.7 of the CHP

APPROVAL

PI

Marc Caffee

Signature:



Date:

