

Safe Method of Use for HSNO 5.1 – oxidisers

A. Classification

HSNO 5.1 oxidisers fall into two categories.

- 5.1.1 which are liquids or solids such as hydrogen peroxide, nitrates and nitric acid
- 5.1.2 which are gases such as oxygen

You **MUST** consult Safety data Sheets (SDS) for details specific to the substance in use.

B. Incompatibilities

- HSNO Class 5.1 oxidisers **shall not** be stored with:
 - (i) a substance that is **not** a class 5.1.1 or 5.1.2 substance but that is classified in class 5.2, or in any of classes 1, 2, 3, 4, 6.1A, 6.1B, 6.1C, or 8:
 - (ii) any organic matter, or substance that contains carbon, in a form that will combust with the class 5.1.1 or 5.1.2 substance:
 - (iii) zinc or magnesium in any form, and any other metal in powdered form.
 - (iv) any substance or material that will combust with air, or will combust with or catalyse the decomposition of a class 5.1.1 or 5.1.2 substance.

C. Significant Hazards

- Contact with metals and organic liquids lead to fire and explosions.
- Accelerant of fires in presence of additional fuel load
- Trace impurities in hydrogen peroxide can cause violent decomposition on heating
- liquids and solids are corrosive. Splashes to the eye can cause irreversible corneal damage and blindness

D. Storage

HSNO Class 5.1 oxidisers **shall not** be stored with:

- any HSNO with any class 5.2, or with class 1, 2, 3, 4, 6.1A, 6.1B, 6.1C, or 8 unless that substance is also classed as 5.1.1 or 5.1.2 or,
- any organic matter, or substance that contains carbon, in a form that will combust with the class 5.1.1 or 5.1.2 substance. Note this includes wooden cupboards where the wood is not protected by a layer such as Meltica or,
- zinc or magnesium in any form, and any other metal in powdered form. Note this includes cabinets made of galvanised (zinc) metal or

- any substance or material that will combust with air, or will combust with or catalyse the decomposition of a class 5.1.1 or 5.1.2 substance.

E. Storage - Limits on Storage Time

- Containers **shall** be checked annually to ensure they are not deteriorating and are in good condition with labels that are intact and legible.

F. Use of Class 5.1 Oxidisers

- Minimal quantities **should** be kept in the laboratory at any one time.
- For any Class 5.1 oxidiser being used, or being held in small containers in the laboratory and is available for use, the following information **shall** be provided:
 - i) the identity of the substance; and
 - ii) the concentration, if applicable and
 - iii) for *approved* oxidising substances of category A, a label stating “oxidising” or “oxidising gas” or a UN class 5.1 label. For *all unapproved* hazardous substances, a brief warning of the hazardous properties must be provided, if such information is available. This information can be provided by use of a United Nations (UN) or Globally Harmonized System (GHS) pictogram or written warning. This warning must be available to the person using the substance within 10 seconds, be durable and readily understood.
 - iv) Date and name of user/owner

G. Personal Protective Equipment (PPE) for Handling HSNO 3.1A Flammable Liquids

- Care **should** be taken to ensure gloves of appropriate material are used when handling oxidisers. Refer to appropriate MSDS
- Eye protection should consist of safety glasses with side shields.
- Use safety shields if using oxidisers in unknown reactions
- A full-face shield may be required for supplementary but never for primary protection of eyes

H. Disposal

- HSNO Class 5.1 oxidisers **shall only** be disposed of via the chemical waste room (TTR007). Refer to information on the SBS resources page for information on appropriate containers and labelling for waste substances. If in doubt, contact your lab manager.

I. Spills

- **Minor spills** – **shall** be cleaned up immediately using the spill kits present in the laboratory
- Extinguish all sources of ignition
- Use correct gloves

- Contain and absorb spill with dry sand, earth, inert material or vermiculite **DO NOT** use organic materials such as sawdust as fire may result
- Used absorbent material is to be placed in an impermeable bag and bag is to be sealed. Place in an appropriate container.
- Inform Laboratory Manager and arrange for immediate disposal.
- If a staff member fill out an incident/accident report. If a student, ask your supervisor fill out the online incident/accident report on your behalf.
- **Major spills –**
 - Extinguish all sources of ignition and clear area immediately.
 - If required provide first-aid to any affected individuals.
 - Close all doors to laboratory and prevent re-entry until 'all-clear' is given
 - Call fire brigade and campus care immediately.
 - Inform Laboratory Manager and/or arrange for SDS to be made available to emergency services.
 - Prepare to evacuate building

J. Emergency Contacts

In an emergency

- Call Campus Security on 8888 (0800 842 8888) or (04) 463 9999 giving location and substance details
- For emergency services call: 111