# A Safe Method of Use
# HSNO Class 5.1 - Oxidising Substances

| | | | |
|---|---|---|---|
|   | 5.1.1 | Oxidizing substances that are solids or liquids | 5.1.1A: High Hazard<br>5.1.1B: Medium Hazard<br>5.1.1C: Low Hazard |
| | 5.1.2 | Oxdizing substances that are gases | 5.1.2A: High Hazard |

## A. STORAGE

• HSNO Class 5.1 compounds ***shall*** NOT be stored with HSNO Class 3 Flammable Liquids, HSNO Class 4 Reactive Solids or HSNO Class 5.2 Organic Peroxides.

• Store separately from any combustible organic compound – preferably store UN Class 5.1 compounds in a separate metal cabinet. Strong oxidisers such as metal peroxides, perchlorates and nitrates react violently with combustible organic compounds such as alcohols, aldehydes, ethers, and hydrocarbons.

• Segregation may also be provided for single containers by storage inside a segregation device (such as a sealable plastic box).

## B. USE

• Ensure that these compounds are used well away from low flash point solvent or any fine ground organic compound.

• These compounds often have a strong corrosive action and ***shall*** be used in a fume hood.

• Care should be taken when using strong oxidising agents such as metal peroxides, perchlorates and nitrates and concentrated nitric acid as these compounds can react violently with combustible organic compounds.

**D. DISPOSAL**

• Disposal of UN Class 5.1 compounds ***shall*** be undertaken by a licensed chemical waste contractor.

• Please contact the Health and Safety Office to arrange for disposal.

• HSNO Class 5.1 compounds ***shall*** be packed separately for disposal.

**C. SPILLS**

• Consult SDS for correct clean up procedure

• Use correct gloves

• If liquid, use absorbent material in spill kits to wipe up – wiping from outside of spill toward centre.

• Place used absorbent material in impermeable/airtight container

• Solids can be placed directly impermeable/airtight container

• Inform the Laboratory Manager and arrange for immediate disposal

# Appendix 1: A Representative List of Oxidising Compounds

**Bromates**

| | | |
|---|---|---|
| Potassium bromate | Sodium bromate | |

**Dichromates**

| | | |
|---|---|---|
| Ammonium dichromate | Potassium dichromate | Sodium dichromate |

**Nitrates**

| | | |
|---|---|---|
| Aluminium nitrate | Ammonium nitrate | Ammonium nitrate fertilisers |
| Barium nitrate | Bismuth nitrate | Cadmium nitrate |
| Calcium nitrate | Cerium (III) nitrate | Chromium nitrate |
| Cobalt nitrate | Copper nitrate | Ferric nitrate |
| Lanthanum nitrate | Lead nitrate | Lithium nitrate |
| Magnesium nitrate | Manganese nitrate | Nickel nitrate |
| Potassium nitrate | Silver nitrate | Sodium nitrate |
| Strontium nitrate | Zinc nitrate | Zirconium nitrate |

**Persulphates**

| | |
|---|---|
| Ammonium persulphate | Potassium persulphate |

**Perborates**

| | |
|---|---|
| Potassium perborate | Sodium peroxoborate |

**Perchlorates, chlorates and chlorites**

| | | |
|---|---|---|
| Barium perchlorate | Lead perchlorate | Magnesium perchlorate |
| Perchloric acid | Potassium chlorate | Sodium chlorate |
| Sodium chlorite | Sodium perchlorate | |

**Hypochlorites**

| | |
|---|---|
| Calcium hypochlorite | Sodium hypochlorite |

**Iodates and Periodates**

| | | |
|---|---|---|
| Calcium iodate | Periodic Acid | Potassium periodate |
| Sodium periodate | | |

**Oxides and Peroxides**

| | | |
|---|---|---|
| Barium peroxide | Calcium peroxide | Chromium trioxide (anhydrous) |
| Hydrogen peroxide | Lead dioxide | Potassium superoxide |
| Silver oxide | Sodium peroxide | Urea hydrogen peroxide |

**Miscellaneous**

| | | |
|---|---|---|
| Dichloroisocyanuric acid | Trichloroisocyanuric acid | Bismuth oxynitrate |
| Cerium (IV) sulphate | Potassium permanganate | Sodium percarbonate |
| Sodium permanganate | Sodium persulphate | |

**Oxidising Acids**

| | | |
|---|---|---|
| Perchloric acid | Periodic acid | |
| Concentrated Sulphuric acid | Concentrated Nitric acid | Chromic acid |

**Nitrites**

| | |
|---|---|
| Potassium nitrite | Sodium nitrite |