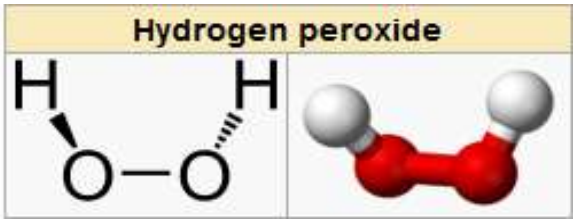
Background Information – Hydrogen Peroxide



Hydrogen peroxide (H_2O_2), designated CAS number 7722-84-1, is a very pale blue liquid, slightly more viscous than water and appears colourless in dilute solution. It is a weak base, has strong oxidizing properties, and is a powerful bleaching agent.

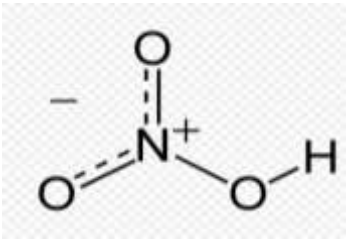
In Australia, Hydrogen peroxide is widely used in diverse industry sectors such as paper and pulp bleaching, laundry, food and beverage, dairy, hair and beauty, mining, pool and spa, pharmaceuticals, water treatment, cleaning.

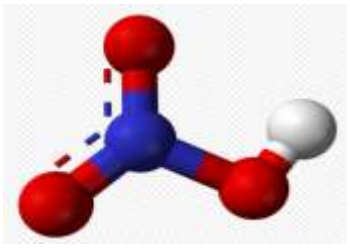
Hydrogen peroxide is currently classed as a Class 5.1 Oxidising Agent [1] within the current Australian Dangerous Goods Code.

Derived hazardous chemicals of Hydrogen peroxide, such as Tri-acetone tri-peroxide (TATP), have been used in terrorist attacks such as the July 2005 London bombings, and in disrupted terrorist attempts such as the December 2001 'shoe bomber' attack in the United States, and the 2006 plan to bomb transatlantic flights between the United Kingdom, United States and Canada.

[1] *Oxidizing substances* comprises substances that, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

Background Information – Nitric acid





Nitric acid (HNO_3), designated CAS number 7697-37-2, is a colourless liquid with strong oxidising properties. Nitric acid reacts violently with many organic materials and the reactions may be explosive.

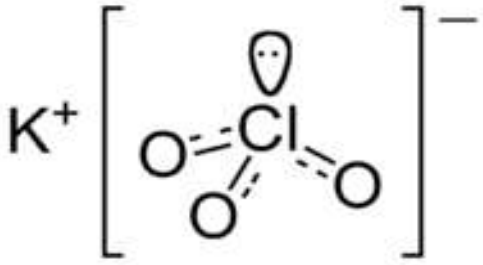
In Australia, Nitric acid is widely used in diverse industry sectors such as mining, food and dairy, food and beverage, metal processing and treatment, chemical processing and supply.

Nitric acid is currently classed as primarily a Class 8 Corrosive Agent[2] within the current Australian Dangerous Goods Code.

Derived hazardous chemicals of Nitric acid, such as Urea nitrate (UN) and Nitro-glycerine (NG) have been used in terrorist attacks such as the 1993 bombing of the World Trade Centre in the United States.

[2] Substances which, by chemical action, will cause severe damage in contact with living tissue, or will damage or even destroy other materials, especially metals (Australian Handbook, Dangerous Goods, Initial Emergency Response Guide, HB 76-2004)

Background Information – Potassium Chlorate



Potassium chlorate ($KClO_3$), designated CAS number 3811-04-9, is a compound containing potassium, chlorine and oxygen. In pure form, it is a white crystalline substance, readily soluble in water.

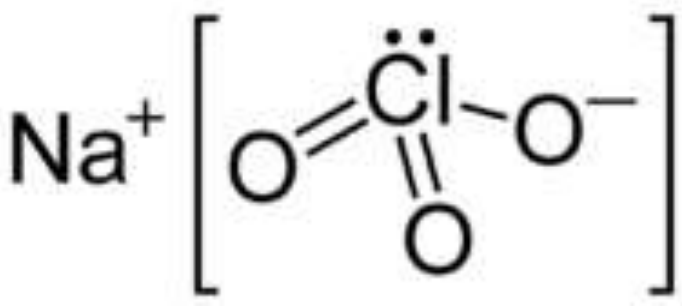
In Australia, potassium chlorate is used in industry sectors such as fireworks and explosives, and as a laboratory and diagnostic reagent.

Potassium chlorate is currently classed as a Class 5.1 Oxidising Agent [3] within the current Australian Dangerous Goods Code.

Derived hazardous chemicals of potassium chlorate have been used in terrorist attacks such as the 2002 Bali bombings, and the 2003 bombing of the JW Marriott Hotel in Jakarta.

[3] *Oxidizing substances* comprises substances that, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

Background Information – Sodium Chlorate



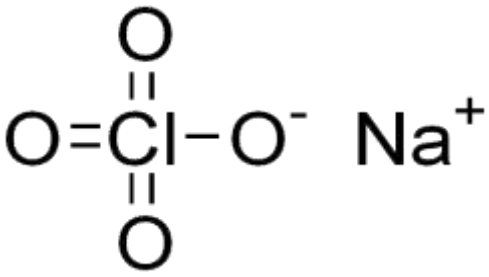
Sodium chlorate ($NaClO_3$), designated CAS number 7775-09-9, is a compound containing sodium, chlorine and oxygen. In pure form, it is a white crystalline substance, readily soluble in water.

In Australia, sodium chlorate is widely used in diverse industry sectors such as mining, metal treatment, paper production, as a food chemical, and as a laboratory and diagnostic reagent.

Sodium chlorate is currently classed as a Class 5.1 Oxidising Agent [4] within the current Australian Dangerous Goods Code.

[4] *Oxidizing substances* comprises substances that, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

Background Information – sodium perchlorate



Sodium perchlorate ($NaClO_4$) designated CAS number 7601-89-0, is an inorganic compound containing sodium, chlorine and oxygen. It is a white crystalline, hygroscopic solid that is highly soluble in water and in alcohol.

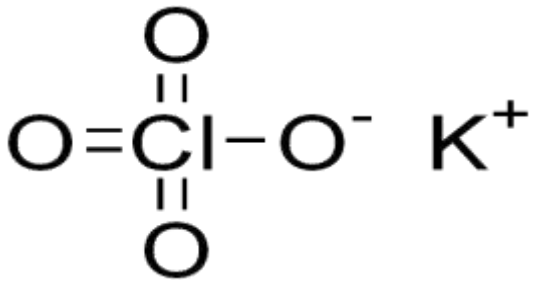
In Australia, sodium perchlorate is used in industry sectors such as mining and smelting, and as a laboratory and diagnostic reagent.

Sodium perchlorate is currently classed as a Class 5.1 Oxidising Agent[5] within the current Australian Dangerous Goods Code.

Derived hazardous chemicals of perchlorate salts have been found in homemade explosive materials in Australia.

[5] *Oxidizing substances* comprise substances that, while themselves are not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

Background Information – potassium perchlorate



Potassium perchlorate ($KClO_4$) designated CAS number 7778-74-7, is an inorganic salt compound containing potassium, chlorine and oxygen. It is commonly obtained as an odorless white crystalline powder and is a strong oxidiser that reacts with many organic substances.

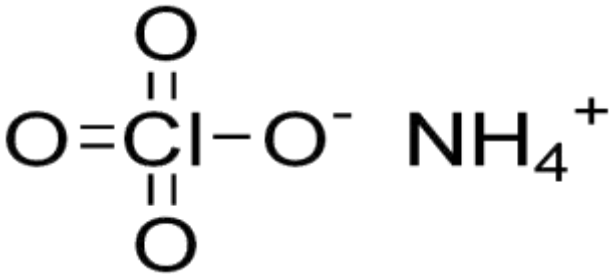
In Australia, potassium perchlorate is used in industry sectors such as fireworks and explosives, smelting and as a laboratory and diagnostic reagent.

Potassium perchlorate is currently classed as a Class 5.1 Oxidising Agent[6] within the current Australian Dangerous Goods Code.

Derived hazardous chemicals of perchlorate salts have been found in homemade explosive materials in Australia..

[6] *Oxidizing substances* comprise substances that, while themselves are not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

Background Information – ammonium perchlorate



Ammonium perchlorate (NH_4ClO_4) designated CAS number 7790-98-9, is the ammonium salt of perchloric acid and is a compound containing nitrogen, hydrogen, chlorine and oxygen. In pure form, it is commonly observed as an odourless white crystalline powder and is a strong oxidiser that reacts with many organic substances.

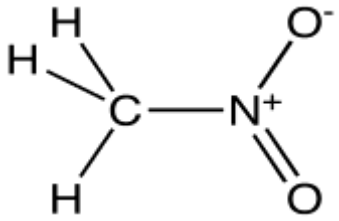
In Australia, ammonium perchlorate is used in industry sectors such as fireworks and explosives, rocketry, and as a laboratory and diagnostic reagent.

Ammonium perchlorate is currently classed as a Class 5.1 Oxidising Agent [7] within the current Australian Dangerous Goods Code.

Derived hazardous chemicals of perchlorate salts have been found in homemade explosive materials in Australia.

[7] *Oxidizing substances* comprises substances that, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

Background Information – Nitromethane



Nitromethane (CH_3NO_2) designated Chemical Abstract Service (CAS) number 75-52-5, is a simple organic nitro compound that is commonly obtained as a slightly viscous, highly polar, colourless liquid with a characteristic chloroform-like odour.

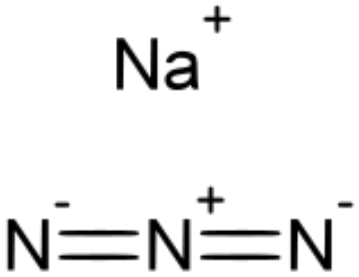
In Australia, nitromethane is widely used in industry sectors such as pharmaceuticals, analytical laboratories, as a racing fuel in high performance racing and in hobby shops as a fuel component in radio-controlled models.

Nitromethane is currently classed as a Class 3 Flammable Liquid[8] within the current Australian Dangerous Goods Code.

In April 1995, a truck containing approximately 5,000 pounds (2,300 kg) of ammonium nitrate, nitromethane, and diesel fuel was detonated in front of the Alfred P. Murrah Federal Building. It was the largest terrorist attack on American soil in history before the September 11 attacks and remains the deadliest act of domestic terrorism in American history.

[8] *Flammable liquids* are liquids or mixtures of liquids, or liquids containing solids in solution or suspension which give off a flammable vapour at temperatures of not more than 60°C, closed-cup test, or not more than 65.6°C, open-cup test, normally referred to as the flash point. This class also includes:
(a) liquids offered for transport at temperatures at or above their flash point; and
(b) substances that are transported or offered for transport at elevated temperatures in a liquid state and which give off a flammable vapour at a temperature at or below the maximum transport temperature (Australian Dangerous Goods Code – 7th Edition).

Background Information – Sodium azide



Sodium azide (NaN_3) designated the Chemical Abstract Number (CAS) number 26628-22-8, is an inorganic salt compound containing sodium and nitrogen. It occurs as a colourless, odourless, crystalline solid (salt-like) or solution. It is soluble in water or liquid ammonia, slightly soluble in alcohol and insoluble in ether. Synonyms and trade names include azium, smite, azide and sodium salt of hydrazoic acid.

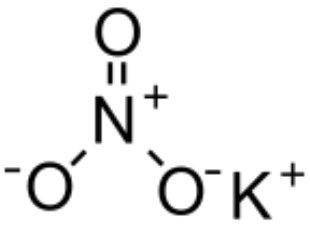
In Australia, sodium azide is used in industry sectors such as smelting, as a biocide in hospitals and laboratories and in dairies.

Sodium azide is currently classed as Class 6.1 Toxic Substances[9] within the current Australian Dangerous Goods Code.

DHCs of sodium azide are primarily used in detonators. Lead azide was chosen as the primary and only DHC based on its prominence in intelligence and technical literature and past history as an explosive.

[9] *Toxic substances* are substances liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact (Australian Dangerous Goods Code – 7th Edition).

Background Information – Potassium nitrate



Potassium nitrate (KNO_3), designated Chemical Abstract Service (CAS) number 7757-79-1 is an inorganic compound containing potassium, nitrogen and oxygen. It is not particularly hygroscopic, is only moderately soluble in water but is soluble in glycerol, ammonia, and slightly soluble in ethanol. Potassium nitrate is a salt, and occurs as a crystalline, odourless white powder.

In Australia, potassium nitrate has a number of industry uses including fertilisers, fireworks and rocketry, and also in food preservation.

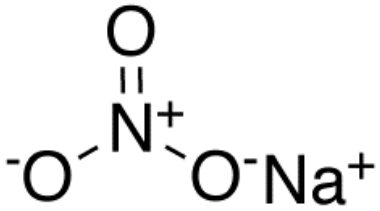
Potassium nitrate is currently classed as a Class 5.1 Oxidising Agent[10] within the Australian Dangerous Goods Code.

Pyrotechnic powders from fireworks, black powder, and smokeless powders are several examples of readily available materials used for the assembly of IEDs and account for fifty four (54) percent of all explosive materials, according to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)[11].

[10] *Oxidising substances* comprise substances that, while themselves are not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

[11] The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) is a Federal Law enforcement organisation within the United States Department of Justice.

Background Information – Sodium nitrate



Sodium nitrate ($NaNO_3$) designated CAS number 7631-99-4, is an inorganic compound containing sodium, nitrogen and oxygen. It is a salt, hygroscopic, and exists as white powder or colourless crystals, with a sweet smell. It is highly soluble in ammonia and alcohol.

In Australia, sodium nitrate has a variety of industry uses including as an ingredient in fertilisers, pyrotechnics, as a food preservative and as a solid rocket propellant.

Sodium nitrate is currently classed as a Class 5.1 Oxidising Agent[12] within the Australian Dangerous Goods Code.

Pyrotechnic powders from fireworks, black powder, and smokeless powders are several examples of readily available materials used for the assembly of IEDs and account for 54 percent of all explosive materials, according to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)[13].

[12] *Oxidising substances* comprise substances that, while themselves are not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (Australian Dangerous Goods Code – 7th Edition).

[13] The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) is a Federal Law enforcement organisation within the United States Department of Justice.