

## Topaz

In its natural state, Topaz comes in a variety of colours including light blue, a yellow or yellow/peachy orange (the latter commonly known as 'Imperial'), the extremely rare pink as well as colourless. This popular gemstone is also one of the most commonly treated.

Blue is the most common colour topaz being used in the Australian jewellery market and – more specifically – it is usually a treated topaz of an electric or very deep blue, often called 'London Blue'. As it is extremely common, knowledge of this type of stone being treated – usually by heat and irradiation - is fairly well recognized. Since the refining of the process some decades ago, the irradiation part of the process has resulted in stones which have a very safe (virtually nil) level of radioactivity.

Less well recognized are a couple of methods of treatment – coatings and diffusion treatment – which have grown in popularity in recent years.

Coating may produce a number of different colours: blue, green, pink as well as an odd effect (like oil on water) called 'mystic'. The treatment may be detected by visual observation under a 10x lens by looking for chipped or worn facet edges which differ in colour from the body colour of the stone or surface iridescence. Using a microscope, the colour may appear inconsistent over the surface of the stone in a 'splutter' or 'dot matrix' type of appearance.

Sometimes, common sense may be enough to ring alarm bells that a coating treatment has been used. 'Mystic' topaz does look to most observers with a basic knowledge of gems as 'unnatural'. A gem which is rare in nature yet readily available and reasonably affordable should also serve as a warning to a buyer. Unfortunately, many buyers assume that because a gem, such as topaz, is called 'semi-precious' that it may not be treated or are aware that some varieties of the gem may command prices to challenge many a 'precious' gem. Pink topaz is an excellent example; very rare in a natural, untreated state making it difficult to source pairs or suites and commanding a corresponding high price. Recently there has been a proliferation of pink coated topaz on the market, available not just in single stones but also whole suites up to fairly large sizes.

Diffusion treatment, where a gem is subjected to a high temperature in the presence of one or more chemicals to change the original colour of a gem, has been getting increased press over recent years particularly in relation to rubies and sapphires. However, this treatment is now also being used by Serenity Co (Swarovski) on topaz to produce blue. Detection is possible with the use of X-ray photoelectron spectroscopy.

