

# firegem

AUSTRALIAN OPAL

*'Australian Opal Jewellery since 1935'*



[firegem.com.au](http://firegem.com.au)

# What is opal?

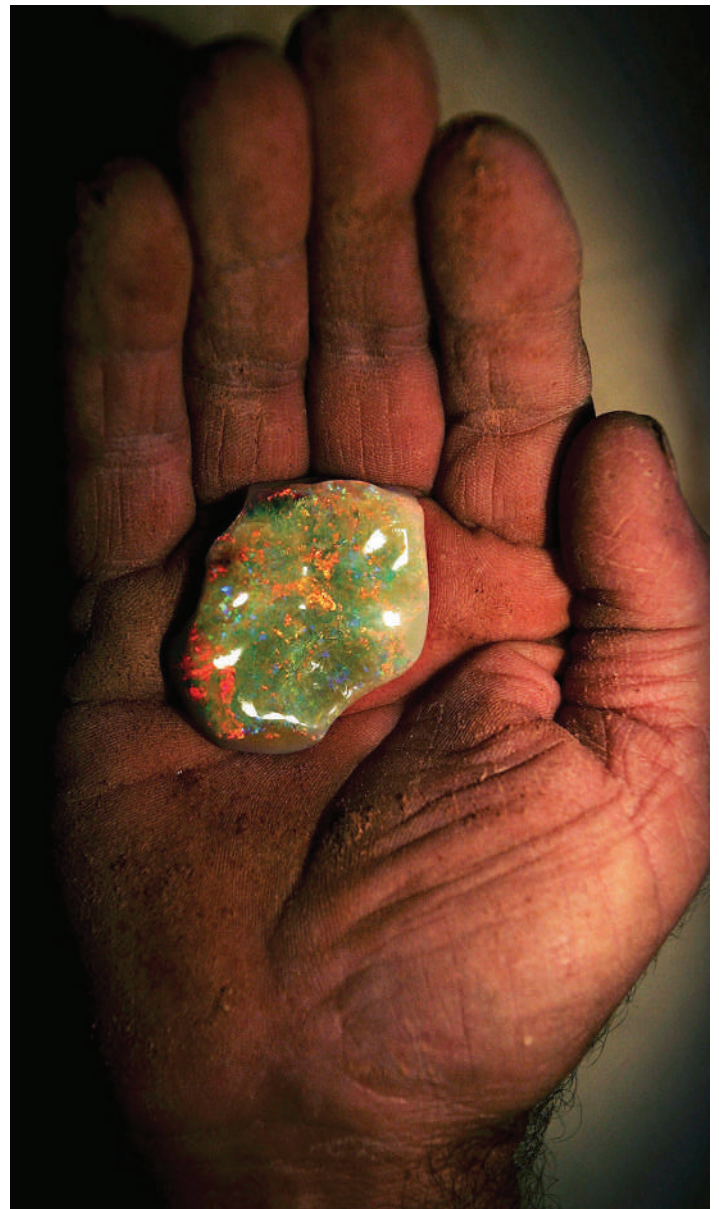
Opal is one of the world's most beautiful and precious gemstones, predominantly found in Australia. It is one of only six types of precious gemstones found on planet earth, sharing prestigious company with diamonds, rubies, sapphires, emeralds, and pearls.

Over 95% of the world's precious opal comes from Australia, and opal is Australia's national gemstone.

While several different types of opal are present in nature, there are two main varieties - precious opal and common opal or potch. Precious opals exhibit the characteristic play-of-colour, and is comparatively rare. Opal which is dull and valueless is called common opal. Common opal occurs in abundance throughout the world. Common opal and potch do not exhibit a play of colour. When common opal is found in association with precious opal, it is known as potch. About 95% of all opal mined from the opal fields is common or potch, that is opal that is basically one coloured, i.e. white, grey, black, and is only suitable for backings for doublets or triplets. Of the 5% that has some colour, about 95% is only of mediocre grade - therefore only approximately 0.25 per cent has any real value at all.

Scientifically, opal is known as  $\text{SiO}_2 \cdot n\text{H}_2\text{O}$  - an amorphous mineraloid comprised of hydrated silicon dioxide. (A mix of silica and water). The opal's appearance can range from colourless, white, and light grey through to dark grey and black. However the truly unique thing about opal is that it displays all the colours of the spectrum in a "play of colour", resulting from the interference and diffraction of light passing through tiny silica spheres in the microstructure of opal. This means the bright rainbow colours of opal, as they appear to the human eye, will move and change dramatically depending on the angle at which the stone is viewed.

A definition of opal : "An amorphous non-crystalline gem mineral solidified from gelatinous or liquid silica deposited in cracks and cavities left by decaying vegetation, wood, crustaceans and bones. Very valuable in its 'black' forms and containing a reasonable content of water. Chemical symbol:  $\text{SiO}_2$  plus  $\text{H}_2\text{O}$ . The water content in opals can be as high as 10%. Refractive Index of 1.38 - 1.60 and a hardness of between 5.5 to 6.5 on Mohs' scale."



Precious opal is defined as opaline silica with a play of colour. The term, play of colour was created solely to describe opal's beautiful shifting of spectral hues. Australian opal is referred to as "sedimentary opal" because it is hosted predominantly by sedimentary rocks of the Mesozoic Great Artesian Basin. Australian precious opals usually contain around 5-6% water and consists of small silica spheres arranged in a regular pattern. Its hardness of 5.5 to 6.5 on Moh's scale puts it about half way down the range (roughly the same hardness as glass). It has a specific gravity of 1.9 to 2.3 depending on the amount of water present.

## How is an opal formed?

Opal is formed from a solution of silicon dioxide and water. As water seeps through sandstone, it picks up tiny particles of silica. Millions of years ago, the solution flowed into cracks and voids in sedimentary as well as volcanic areas inland Australia. Estimates suggest this solution had a rate of deposition of approximately one centimetre thickness every five million years at a depth of forty metres. Over a period of approximately 1 to 2 million years after this period solidification occurred as the climate changed. The opal therefore remained soft and un-cemented for long periods before becoming hardened. Find out more about how opals are formed.

## How and why are opals coloured?

As the silica in solution was deposited, and the water content gradually decreased, spheres formed in the gel. The spheres are formed by the particles of silica spontaneously adhering to other particles which form around it. These spheres of amorphous silica range in size from 1500 to 3500 angstroms (1 angstrom is 1 ten millionth of 1 millimetre).

The spheres are not only remarkably uniform in size but are packed, in gem quality opal, in a very regular array. Because they are spherical, there are tiny holes remaining in the structure (much the same as when marbles are placed together in a container) and these holes too are arranged in a regular three dimensional way. Therefore because of the regular array of these cavities, opal is an optical diffraction grating for visible light.

When the spheres are bigger (about 3500 angstroms diameter) the red or orange colours are produced. And at the other end of the scale, at about 1500 angstroms diameter, the blue end of the spectrum is diffracted. Between these figures the rest of the colours of the rainbow occur. From this it can be deduced that the light diffraction in the voids is greatest when the sphere size is greatest. Therefore red is usually the brightest colour and the blue duller.

In summary, the colour in precious opal is caused by the regular array of silica spheres and voids diffracting white light, and breaking it into the colours of the spectrum. The diameter and spacing of the spheres controls the colour range of an opal. Small spheres produce opal of blue colour only (the most common), whereas larger spheres produce red (the rarest colour). For more detail, see our article on how colour is formed in opals.

## What is an opal's value?

The value of each individual opal differs greatly depending on the unique qualities of the opal. There are many determining factors, including body tone, play of colour, colours present, brilliance, pattern, and size. Please see our article on the value of opal for a more detailed explanation of how opal is valued.

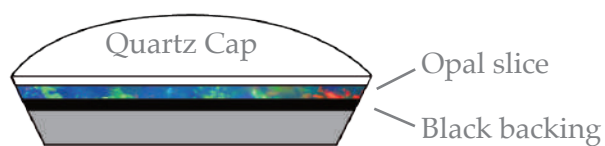


# What are Doublet and Triplet opals?

One of the most basic things you should familiarise yourself with when expanding your education on opal are those partially man made stones known as doublets and triplets. In summary, these stones are slices of opal glued to a black backing, designed to imitate the appearance of a solid black opal. Adhering the slice of opal to a black backing causes the colour to become much darker and more vibrant. However doublets and triplets are generally much cheaper than solid black opals as they contain a small amount of genuine opal.

Triplets consist of three layers:

1. A black backing - see diagram
2. A thin slice of opal in the middle
3. A clear glass, quartz, or plastic capping in the shape of a dome. The slice of opal in a triplet is usually extremely thin (paper-thin) so the clear capping serves to give the stone a nice cabochon on top. The clear capping may also magnify the colour of the opal slightly, and also serve to protect the opal.



Because triplet opals have a clear non-opal capping on top, it is easy for an experienced person to identify a triplet immediately by the appearance of the stone. Triplets usually have a 'glassy' appearance and the light reflects differently from the top of the stone. Triplets are normally cheaper than doublets because they contain less real opal. Because the top of the stone can be made from synthetic material, triplets can be a lot more resistant to impact than solid or doublet opal stones. (Opal by its nature is a fragile gemstone).

## Caring for doublets and triplets

Because opal doublets and triplets consist of layers which are glued together, prolonged exposure to water may cause lifting between the layers and infiltration of water. (This does not mean your opal will be ruined if you wear it in the shower once, or are caught in the rain.) If water penetration occurs, a doublet or triplet will take on a 'foggy' or grey appearance. You may even notice the appearance of condensation inside the stone. You should avoid getting a triplet or doublet opal wet to avoid water penetration.

Please note: There is a lot of confusion regarding the care of opals because of the different caring instructions for solid opals as opposed to doublets / triplets. Solid opals are fine in water - it's only doublets and triplets which need to be kept out of water to avoid water penetration. Getting a solid opal wet will do no damage whatsoever.

Cleaning - Doublets & triplets may be wiped with a damp soft cloth and mild detergent, but should never be soaked or immersed. Avoid bleach, chemicals, cleaners, and ultrasonic cleaners.

## Summary

Opal triplets can be a fantastic alternative to solid stones as they are much cheaper than solid black opals. Solid opals with the same appearance as an opal triplet can be ten times the price as they are rare and valuable, therefore they serve a useful purpose in making beautiful dark opals affordable. However, you need to be aware of what you are buying, and know how to correctly care for triplets to avoid water damage.

# Ladies Rings:

The range of Opal rings in the FIREGEM collection are made to the highest standard and are quality controlled at each stage of production. The minimum thickness in each shank is 1.00mm after polishing, with most rings in the range set to 1.10mm in ladies rings, and 1.20mm in gents rings. Stone settings are rigorously checked post setting, and again after final polish to ensure no loose stones or porosity in the metal. Ring sizes kept in stock are L, N, P, R, however any size can be specially ordered and delivered within 3 weeks. Production standard is 9ktYG, 9ktWG and Sterling Silver, however we can also produce in 14 and 18kt metal, and Rose Gold.

Most of the images in our catalogue feature Triplet Opal, however some images show the item with a Solid White Opal. White Opal is available in most designs where the stone is 10x8mm or smaller.



# Rings

LADIES



R524-TA  
11 x 9



RO301-TA  
18 x 13



RO398-TA  
14 x 10



RO328-TA  
8 x 6



RO544-TA  
10 x 8



RO535-TA  
9 x 7



RO316-TA  
10 x 8



RO535-TA  
10 x 8



RO535-TA  
11 x 9



RO353-TCZA  
8 x 6



RO537-TCZA  
10 x 8



RO329-TCZA  
14 x 10



RO358-TA  
5mm



RO535-SC  
9 x 7



RO563-SDC  
9 x 7



RO537-SDC  
10 x 8



RO370-SDC  
8 x 6



R481-SC  
8 x 5



RO353-SDC  
10 x 8



RO192-SDC  
9 x 7



R176-SDC  
8 x 6



R158-SDC  
8 x 6



RO313-TC  
8 x 6



RO311-TC  
8 x 6



RO537-TDC  
10 x 8



RO398-TC  
14 x 10



RO544-TC  
10 x 8



RO328-TC  
8 x 6



RO363-TDC  
10 x 8



RO536-TC  
10 x 8



RO316-TC  
7 x 5



RO317-TDC  
12 x 10



RO301-TC  
10 x 8



RO315-TC  
8 x 6



RO535-TC  
11 x 9



R601-TC  
7 x 5 | 8 x 6 | 7x5



RO535-TC  
10 x 8



RO316-TC  
9 x 7



R158-TDC  
8 x 6



RO315-TC  
10 x 6



# Men's Rings & Cufflinks:

One of the more popular offerings in the FIREGEM collection is the range of gents signet rings and cufflinks. These rings can be ordered in any size, however our stock sizes are T, V, X.

The rings are hollow under the stone and solid through the shank of the ring, allowing for re-sizing of 2 sizes either up or down.

Production standard is 9ktYG and Sterling Silver, however we can also produce in 14 and 18kt metal, and Rose Gold.

Most of the images in our catalogue feature Triplet Opal, however some images show the item with a Solid White Opal. White Opal is available in most designs where the stone is 10x8mm or smaller.

Cufflinks are standard in Sterling Silver only, but again, 9, 14, or 18kt gold can be specially ordered.



# Rings

MEN'S



858-TA  
12 x 10



875-TA  
14 x 12



864-TA  
14 x 10



906-TA  
10 x 8



1813-TC  
18 x 13



1412-TC  
14 x 12



738-TC  
14 x 12



875-TC  
14 x 12



730-TC  
14 x 12



723-TC  
12 x 10



858-TC  
12 x 10



904-TC  
10 x 8



912-TC  
10 x 8



788-TA  
10 x 8



CL993-TA  
16 x 12



CL993-TC  
16 x 12



The amazing opal mine tunnels at Coober Pedy

# Pendants:

The most comprehensive collection in the FIREGEM range are our pendants. With something for everyone, from our 'Australiana' designs for tourists, our 'free-form' designs that catch the eye and demand attention, through to the basic heritage range that is perfect for any retail store.

The free-form pendants are difficult to catalogue because of the individual nature of each stone. It would be almost impossible to replicate the same design, which is why these have been left out of this catalogue. However, our agents always have these with them and no FIREGEM display is complete without a 'free-form' pendant.



# Pendants

SILVER & GOLD



PO817-TDC  
18 x 13



PO834-TA  
16 x 12



PO739-TA  
16 x 12



PO831-TA  
18 x 13



PO831-TA  
18 x 9



PO862-TA  
5 x 3



PO827-TA  
10 x 8



PO805-TCZA  
16 x 12



PO849-5TA  
5mm



PO827-TC  
12 x 6



PO834-TA  
14 x 12



PO836-TA  
10 x 5



PO840-TDC  
18 x 13



PO860-TC  
8 x 6



PO819-TA  
10mm



PO805-TCZA  
11 x 9



PO834-TDC  
25 x 15



PO848-TA



PO588-TC  
7 x 5



PO521-TDC  
13 x 8



PO587-TC  
7 x 5



PO586-TC  
7 x 5



PO834-TC  
16 x 10



PO743-TC



PO523-TDC



PO804-TC



PO841-TDC  
10 x 8

# Pendants

SILVER & GOLD



PO517-TC  
8 x 6



PO516-TC



PO502-TC  
10 x 8



PO805-TDC  
10 x 8



PO752-TDC  
10 x 6



PO739-TC  
16 x 12



PO831-TC  
10 x 6



PO864-TDC  
10 x 7



PO501-TC  
9 x 7



PO837-TC  
9 x 6



PO524-TCZA  
10 x 7





PO742-SC



PO827-SC  
8 x 6



PO523-SDC



PO783-SDC  
8 x 6



PO837-SC  
9 x 7



PO836-SC  
10 x 5



PO803-SC  
7 x 5



PO516-SC



PO841-SDC  
10 x 8



PO588-SC  
7 x 5



PO805-SDC  
10 x 8



PO723-SDC  
8 x 6



PO587-SC  
7 x 5



PO804-SC  
7 x 5



PO586-SC  
7 x 5



# Earrings:

FIREGEM earrings are made with strict quality control and assay assurances to ensure the metals that go into our products, and therefore into your ears, conform to the Responsible Jewellery Council guidelines.

We use only nickel free alloys in all our products to avoid any potential skin reactions.

Our earrings posts are 0.90mm in thickness and average 10.5mm length. And we couple these with double groove butterfly scrolls.

Shepherd hook earrings come with a clear silicone rubber stopper to prevent the earring falling from the ear.

Production standard is 9ktYG, 9ktWG and Sterling Silver, however we can also produce in 14 and 18kt metal, and Rose Gold.

Most of the images in our catalogue feature Triplet Opal, however some images show the item with a Solid White Opal. White Opal is available in most designs where the stone is 10x8mm or smaller



# Earrings

SILVER & GOLD



EO921-TCZA  
9 x 6



EO900-TA  
5mm



EO934-TA  
7 x 5



EO990-TCZA  
10 x 8



EO900-TA  
9 x 7



EO901-TA  
6mm



EO901-TA  
8 x 6



EO901-TA  
10 x 8



EO902-TA  
6mm



EO910-TA  
8 x 5



EO905-TDC  
8 x 6



EO909-TC  
6mm



EO910-TC  
8 x 5



EO900-SC  
9 x 7



EO928-SDC  
9 x 6



EO934-TC  
9 x 7



EO966-SC  
6 x 4



EO968-TC  
6mm



EO986-TDC  
10 x 6



EO900-TC  
8 x 6



EO999-TDC  
10 x 6



EO1005-SC  
8 x 6



EO1006-TC  
5mm



EO1006-SC  
7 x 5



EO1006-TC  
7 x 5



EO1006-TC  
8 x 4



EO1006-SC  
8 x 6



EO1026-TC  
11 x 9



EO1007-TC  
6mm



EO1007-TC  
6 x 4



EO1007-TC  
7 x 5



EO1007-SC  
8 x 6



EO1009-SC  
7 x 5



EO1010-TC  
5mm



EO1011-TC  
7 x 5



EO1019-TC  
10 x 6



EO1018-TA  
10 x 8



EO1023-TC  
8 x 6



EO1025-TDC  
14 x 7



EO1011-TC  
5mm

# Bracelets & Brooches:

Our newest additions to the FIREGM range are these beautiful created bracelets and brooches.

Our bracelets are a standard 19cm length, but can be special ordered in longer or shorter lengths. We keep stock in Sterling Silver only, but 9kt is also available upon request.

The brooches are available in silver and silver gold plate. The gold plate standard is 1.25 microns so that they are guaranteed to last, and are confidently backed under our two-year international warranty.



# Bracelets & Brooches

SILVER & GOLD PLATED



BR610-TCZA



BR602-TCZH



BR603-TCZH



BR604-TCZA



BR608-TA



BR614-TA





BL1-TA



BL3-8 x 6-TA



BL3-10 x 8-TA



BL4-TA



BL5-TA



BL6-TA



BL8-TA

# Firegem

DESIGN & SUPPORT

Since FIREGEM's inception in 1935, we have produced jewellery which showcases stunning Australian opals. We understand that opals offer organic, unconventional shapes and striking colours, thus presenting individuals with an incredible opportunity to express their eclectic, bold and creative sense of style. Opals are no longer a collector's item for the older generation and tourists – they are statement pieces developed for those interested in art, creativity and fashion.

The Firegem range respects the individuality and integrity of each opal, using simple and clean designs to create both remarkable bulky items and more delicate, everyday pieces. By manufacturing the range exclusively within our factory, we provide these pieces without the designer price-tag that you might expect.

Items from the Firegem range can be selected individually from our catalogue, or purchased as a display suite with accompanying branding. The packaging for the Firegem range involves earthy colours, silver text, and luxe velvet textures to truly showcase the designs. Point-of-sale material, warranty cards and posters complement the in-store display.



*Opal diggings on the outskirts on Coober Pedy*



