

Jet : a popular gem of Victorian Era

The jet gemstone is fairly unknown but its use in jewellery dates back to Neolithic times in Ancient Britain. The Ancient Romans later adopted and popularized this gem material not only in ornaments but with a belief that it was associated with magical properties. During the later Victorian Era, jet jewellery was a popular choice for mourning wear. Jet is a product of high-pressure decomposition of wood from millions of years ago. Jet is found in two forms, hard and soft. Hard jet is the result of carbon compression and salt water; soft jet is the result of carbon compression and fresh water.



Thus Jet Stone is an organic rock that is created when pieces of woody material are buried, compacted, and then go through organic degradation. It mostly occurs in black to brown colour. The chemical composition of the jet is similar to that of brown coal or lignite, an inferior coal, with traces of minerals. Its analysis shows the contents as: Carbon 75.2%, Hydrogen 7.0%, Nitrogen 0.7%, Sulphur 4.6% and Oxygen 12.5%. It also contains traces of Silicon, Potassium, Calcium, Iron, Copper and Aluminium. It is an Amorphous material. When polished it gives dull to waxy lustre. The refractive index of jet is 1.66 with the hardness from 2 to 4.5 on Mohs scale. It has the specific gravity of 1.19-1.35. It doesn't show any cleavage or pleochroism, but shows conchoidal fracture. The jet found at Whitby, England, is approximately 182 million years old.

The jet found in Asturias, the biggest deposit in northern Spain, is about 155 million years old. Asturian jet is a perhydrous coal that suffered an anomalous coalification process and presents great material stability over long periods of time. Main source of jet is in the North York Moors National Park area of North Yorkshire. Jet today is found in Asturias and Aragon, Spain and in Colorado and Utah, USA. Other notable sources are France, India, Russian, Poland and Turkey.

Jet jewellery such as rings or other pieces for frequent wear should have protective settings as it is a soft gemstone. It needs to be stored separately from other harder materials to prevent contact scratches. A soft brush, mild detergent, and warm water are used for cleaning.

Since Jet jewellery are much expensive, nowadays people use many simulants as imitation of the jet; like Kimmeridge Shale, Lignite, Anthracite, Bog Oak, Black Onyx or Black Glass. Most of the time it is difficult to identify the Jet from its simulant with visual eyes or 10x loupe. Therefore, Jet jewellery should be sent to Gemmological laboratory for proper gem testing procedure like ED-XRF for chemical analysis or Raman Spectroscopy for Photoluminescence properties, which can authenticate the Jet jewellery from any other simulant jewelleryes.

Bibliography:

1: <https://www.gemsociety.org/article/jet-jewelry-gemstone-information/>

2: Page No 76, Text book of Organic Gems of Gemmological Institute of India