



## AN ANALYSIS OF MOISSANNITE AS A SUBSTITUTE OF DIAMOND FOR USE IN JEWELLERY

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### Abstract

*Diamonds are said to be a woman's best friend. Since they occur naturally, are mined and polished, they cost dearly. Naturally occurring diamonds are rough and not impressive. Their cutting and polishing bring about the great deal of value addition in their brilliance and price simultaneously. Mining of diamonds has a hazardous impact on both the environment as well as the workers. Moissanite, a lab- created stone, resembles Diamond in more ways than one. It is even superior to a Diamond as far as brilliance is concerned. Another aspect that attracts attention is its price- almost one- tenth of the diamond cost for the same size. Through this research paper, the Researcher intends to evaluate Moissanite as an alternative of Diamond in the jewellery industry.*

**Keywords:** *Diamond, Moissanite*



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### INTRODUCTION:

Diamonds are a form of Carbon that is formed in the Earth's mantle over years, under extreme heat and pressure. They occur naturally, are mined, cut and polished respectively. Renowned for being the hardest substance on earth, sparkling fire, durability and rarity, they are most used in the jewellery industry.

Diamonds in their natural form are rough and not at all impressive. It is in the polishing that a Diamond acquires enormous part of brilliance, glitter and value addition. Diamonds used to be polished manually until a few decades ago. Thanks to the technological advancements, use of complex mechanical devices have enhanced both the accuracy and the output. Diamonds are often sold along with certification that lists the details about the four Cs discussed above. There are recognised agencies like GIA (Gemological Institute of America), AGS (American Gem Society) etc. that undertake Diamond certification.

Moissanite is made of silicon carbide that has similar appearance as that of a Diamond. It was first discovered in the crater former by a fallen meteor by the French scientist, Henri Moissan. Natural Moissanite is incredibly rare, so Moissanite available today is manufactured synthetically in control laboratory environment. Although a moissanite is engineered to give the illusionary similarity to Diamond, the two gems have distinct properties.

### **OBJECTIVES OF THE STUDY:**

To study Moissanite as a substitute of Diamond for use in jewellery.

### **METHODOLOGY:**

The research has been conducted purely based on the secondary data available from several websites.

### **LIMITATIONS OF THE STUDY:**

The study ignores the industrial uses of diamonds.

### **DATA ANALYSIS:**

Ascertaining the quality of Diamond involves several parameters, commonly known as the four Cs:

**Colour:** Diamonds may range from being absolutely colourless to being intense or deep yellow. The colour of a diamond is graded on an alphabetical scale ranging from D to Y. D is totally colourless and Y indicates colour depending on the amount of yellow saturation.

**Cut:** The sparkle that a diamond emits is due to its cut or the facet i.e. the shape and style in which the diamond is cut. The most prevalent is the brilliant cut, a facet specially designed to bring out the most fire in the stone.

**Clarity:** Clarity is graded on the size and visibility of the flaws and inclusions in a diamond. Letters are assigned to the stone to label the quality of clarity. FI is flawless without any inclusion, IF is internally flawless that contains no inclusions at a magnification of 10x. VVS indicates very very slight inclusion, VS indicates very slight inclusion and SI that indicates larger flaws visible at a magnification of 10x. I is for Inclusions that are very large and visible to the naked eye.

**Carat:** The size of the diamonds is measured in carats (ct). Five carats make one gram, which means a carat is equivalent to 0.2 grams. Sometimes, the weight is measured in term of points. Each point is equivalent to one- hundredth of a carat. The weight of a diamond will affect its pricing, larger diamonds have a higher price.

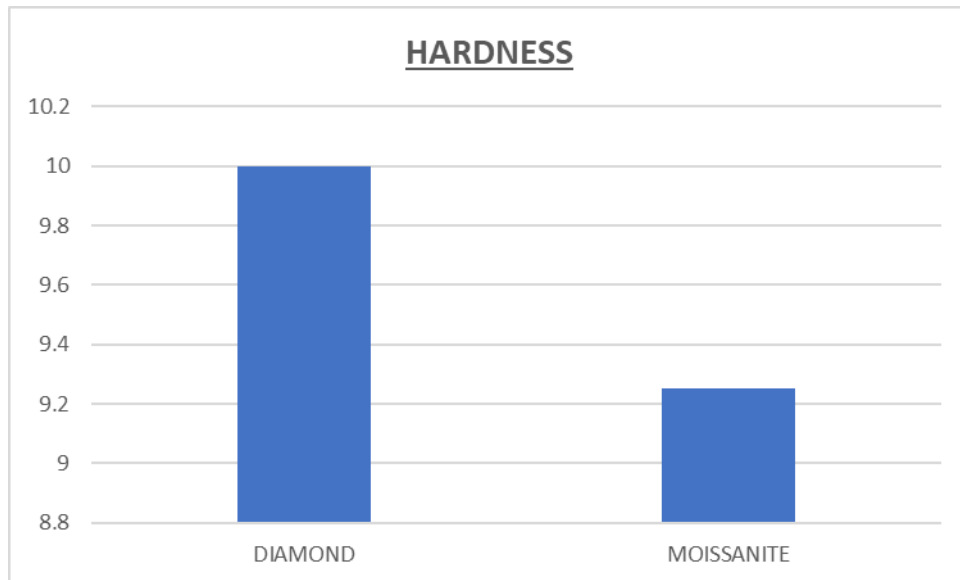
### **The Comparison: Diamond vs. Moissanite**

#### **Parameter I- Colour**

As discussed above, the diamonds are graded on an alphabetical scale from D to Y. Moissanites, however are not colourless and not graded on colour. Experts say that Moissanites resemble the K- colour GIA- certified diamond. Under certain lighting conditions, Moissanite may project a yellow or green hue.

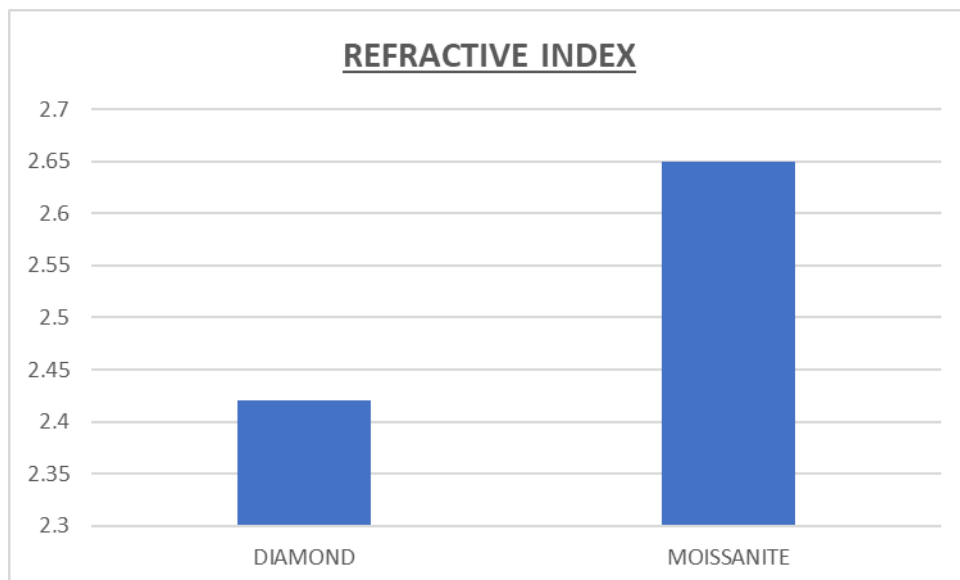
### Parameter II- Hardness

Diamonds, difficult to scratch, are the hardest material on the Earth. They are rated as 10 on the Mohs Scale of Hardness. On the same scale, Moissanites score 9.25 which is great.



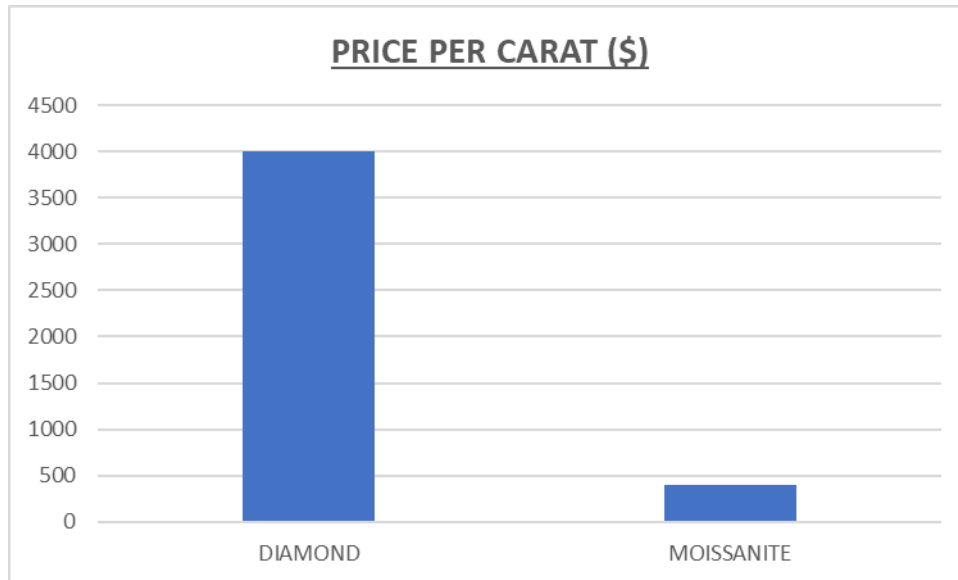
### Parameter III- Brilliance

Brilliance is the property to reflect white light. It is a measure of how a diamond will sparkle or emit out 'fire'. The higher the refractive index, the more will be the brilliance. The refractive index of Diamond is 2.42 as against 2.65 to 2.69 as that of the Moissanite.



#### Parameter IV- Price

Moissanite is a fraction of the cost of a Diamond. While a Diamond's price is based on the four Cs, Moissanite stones are usually the same price and vary only with size. An average 1 carat diamond costs \$4000 whereas a Moissanite of similar appearance and size costs \$ 400.



#### CONCLUSION:

Moissanite does not replicate the look of a diamond exactly. Nonetheless, it presents a viable option for those not wanting to purchase a diamond for budgetary or other reasons.

#### Disadvantages of Diamond:

1. The consumers are often deceived by sellers providing certification of the Diamond jewellery after mounting. This may not give out the accurate specifications of the Diamonds studded therein.
2. Growing demand for Diamond leads to illegal mining and smuggling.
3. Mining of Diamonds is risky and a threat to the mining workers' lives as well as to the environment.
4. The cost of Diamonds is extremely expensive as compared to other gem stones used in jewellery.

#### Advantages of Moissanite:

1. Moissanite is available at one- tenth price of a Diamond.
2. Moissanite is lab created and has minimal impact on the environment.
3. Moissanite has more fire and similar durability when compared to a Diamond.

The researcher sincerely hopes that her study will be instrumental in helping a lot of men and women choose their jewellery purchases thoughtfully and judiciously in future.

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