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How gold is extracted by Cyanidation Process

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How gold is extracted by Cyanidation Process

Cyanidation is a method used in the extraction of gold from its ore. This extraction is done by converting the gold to a water-soluble form. The cyanidation process of gold extraction or the use of cyanide is the most common leaching process, used in the extraction of gold from its ores.

Some countries do not approve of this method of gold extraction because of the poisonous nature of the cyanide.

Steps to extract gold by cyanidation process:

The process of extracting gold by cyanidation process involves three important steps that have to be looked into:

1. The first step involves bringing the finely ground ore and the cyanide solution,
2. Then removing the solids from the clear solution, and
3. Lastly recovering precious metals from the clear solution by a method known as the precipitation of zinc dust.

You will be left with pure gold as the end results and this is basically what the cyanidation process entails.

Gold in Rocks

Gold that appears in rocks means that the rock has to be dug up for the gold to be removed. The main reason for the extraction of the rocks is because you want to have the pure Gold and not Gold with impurities.

Gold in rocks have material such as quartz, and the gold must be treated in a unique way so that you do not interfere with the gold.



Some of the ways that you can use to extract gold from rocks include the following:

1. Crushing the rock

I wish this process could be as easy as it sounds. However, if you crush the rock the wrong way, then you will end up losing some of the valuable gold. Use a bash plate and a very strong container when crushing the stone to get the gold, so that you do not lose any piece of gold.

In addition to that, do not use the regular hammer because you may end up losing some pieces, instead use a hammer that fits well into the container so that you do not leave room for the gold to escape.

2. Powdering the Rock

Powdering the rock is a process that involves taking up the crushed pieces of the rock and making them even smaller. Using a heavy metal, smash the crushed rocks further until it is in the form of a powder. Ensure that the result is finer than sand. This process helps in getting all the gold from the rocks.

The amalgamation process then helps in separating gold from the rock by adding mercury to the finely powdered rock-gold. The gold dissolves and then forms an amalgam.

Gold from Scrap

Extracting gold from scrap means that you will collect any gold-containing [scrap metals](#) and extract the gold from them. These metals can include jewellery and other electronics that are out of date. If you have access to outdated electronics, then you have higher chances of getting more gold, making the whole process productive and worth the struggle. Gear up for this process by wearing protective clothing, and with the right chemicals and containers that can hold the scrap metals, you can obtain the gold.



Smelting of Gold

This is the technique that is used in obtaining gold from the ores of the gold. Smelting is done using high heat, pressure, and other chemicals to break down the mineral of the gold and melt the gold. This helps in separating it from other impurities.

However, this method of separating gold from other metals is considered dangerous, and that is the reason why many people still prefer using liquid mercury to separate the gold from other metals. However, mercury is also hazardous, especially when handled the wrong way, as it can cause long-term illness and other complications.

After smelting, please do not throw away the metals used in this process as it is hazardous to the environment. Since the gold cannot be carried during the smelting process, it is poured into bars, which makes transportation very easy and quick.

Chemical used in separating Gold from Rock:

The chemical that is used in the separation of gold from a rock is mercury. After the rock containing gold has been crushed to powder form, mercury is added to get the gold from the powder. Gold is dissolved in mercury to form an amalgam, just like the other minerals. In addition to that, using the cyanide solvent, gold is dissolved from its ore.

Gold Extraction from Mines

Gold and silver are both extracted from the mines using the cyanidation process. This process is achieved by dissolving gold or silver in either a potassium cyanide or sodium cyanide solution.

Mining companies also incorporate the use of a technical extraction process in the extraction of gold. Larger pieces are broken down into much smaller pieces. The removal of silver from its ores also uses the sodium cyanide process, just like gold.



Gold Leaching

Leaching is used in situations where gold cannot be concentrated for smelting. The most common process used in the cyanide process. However, a type of leaching known as thiosulfate leaching is the best on gold ores with highly soluble copper value. Another procedure that is used in testing an area where gold is highly concentrated is through the Bulk Leach Extractable Gold.

This method is used in areas where gold might not be openly visible. Moreover, if the copper levels in the gold are higher, then you might consider trying sulfuric and nitric acids in the leaching process.

Everything has its limit – iron ore cannot be educated into gold

– MARK TWAIN

In conclusion, the extraction of gold should be done carefully and with protective gear. Working in a gold mining industry without any protective gear can cause health hazards to your body and overall health.

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To remove gold from rocks, you first need to crush the rock. This is not as easy as it sounds because one slight mistake can make you lose a large amount of gold. This is why it is advised that you use a sizeable container and a hammer that fits precisely into the container without leaving any space. You will end up with a powdered mixture of rock and gold. This mixture needs to be crushed further until it forms fine particles. Mercury, being the main chemical that is used in the separation of gold from rock, is then added to the mixture to get gold only. This is what is known as the amalgamation process.

Therefore, before using mercury, ensure that it is approved in your country because some countries do not support using it because of its highly poisonous nature.

◀ **CYANIDATION** ◀ **CYANIDATION PROCESS** ◀ **CYANIDE PROCESS** ◀ **GOLD**
 ◀ **GOLD CYANIDATION** ◀ **GOLD EXTRACTION** ◀ **GOLD IN ROCKS AND SCRAP**



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