

What is a retort? A retort is a vessel to which heat is applied in order to separate different materials.

How is this relevant to the gold prospector?

An amalgamation of gold and mercury is obtained by mixing mercury in with gold. The mercury will coat the gold and will not cover the quartz, ironstone or other compounds that are in the pot.

The retort is for separating the mercury from the gold.

The cast iron pot of the retort is sealed with a little bit of silicone so that there is no opportunity for Mercury vapours to escape from the bowl. The bowl is attached to the retort frame and then heated. This can be done with a fire, a gas ring or another broad heat source. On average this could take between 30 minutes and an hour. IT IS IMPORTANT THAT THE POT IS ONLY FILLED HALF WAY TO ALLOW FOR EXPANSION DURING THE HEATING PROCESS.

There is a hole in the top of the retort housing that is filled with water BEFORE the heating of the pot begins, this cools the Mercury vapours as they pass through the tube to the end of the retort and returns the Mercury to liquid at the exit.

The retorts we sell are the non-vented type. It is simply a boiling vessel and a cooling tube from which the Mercury drips into a catch vessel. At the end of the retort you need to place a catch vessel. This will catch the Mercury as it liquefies. Ensure that there is some water in the catch vessel. With this type of retort **NEVER** put the exit end under water in a catch vessel. If you do, a very slight drop in the temperature of the boiling Mercury will create a vacuum sufficient to suck water back through the system right onto the boiling Mercury. This will almost certainly create an explosion, blowing iron shrapnel, poisonous mercury vapours, you and your gold all over the place. Please note that as the mercury comes out of the retort and into the catch vessel, the water level will rise as mercury is added to the vessel. This needs to be noted so that you don't get in trouble with the problem of water being sucked into the retort pot as described above. When the retort pot has cooled the gold is left and is ready to be smelted.

Mercury is toxic. It attacks your nervous system doing damage over a short and long period of time. It has the characteristic of not being easily excreted from the body, so if you feel fine, it still may affect you in the long term. The most dangerous thing about Mercury is that the lungs will readily absorb the vapours.

There are some basic precautions that need to be taken when working with a highly toxic and dangerous chemicals - Mercury:

- Always use plastic/latex gloves as they provide good cheap protection.
- Never use a retort or heat Mercury indoors, make sure that it is in a well ventilated space.
- Make sure that you do not stand down wind of the Mercury vapours that are released and do not breathe the fumes.

- Mercury must be stored in containers that are not made from Aluminium and must close very tightly.
- Put a layer of water over the Mercury to lower the vapours (unless it is charged Mercury).
- Avoid spilling Mercury as it shatters into tiny particles that are almost impossible to find and clean up.
- Only ever use a sturdy retort as other light weight metals and glass will shatter.
- If there is any chance of Mercury poisoning seek emergency medical help immediately.