

## Gold Recovery

The manufacturing of jewelry is comprised of molding to form the jewelry followed by a polishing step, then deburring or ultrasonic cleaning. These steps leave residual gold in the rinsing and ultrasonic cleaning waters. To recover the gold, industries use the FloccinAgents™ for a one step liquid/solid separation process.

The process is to collect all of the wastewater into a mixing container. The pH is usually alkaline from the alkaline cleaners and ultrasonic polishing agents.

Therefore, the pH is adjusted to 7.5-8.0 using an acid such as citric or hydrochloric (pool acid). Then the Floccin products are added at a dosage averaging 15 lbs./500 gallons. The solution is then mixed with a mixing system and a large flock is formed (see the photos). After mixing for 60 seconds, the flock is allowed to settle and the clear water decanted off. The remaining solids are concentrated by pouring the solids over a paper or cloth media. The remaining water flows through the media leaving the 'dry' gold/sludge behind.

The gold bearing sludge is then collected and sent to a gold recovery facility. The cost of recovery averages 20% of the recovered gold weight (80% is returned to the facility).

### Case Study:

A gold jewelry manufacturer using the Floccin products averages 6.5 ounces of gold in 500 gallons of a variety of rinses and cleaning solutions each day. Following these steps, 99% of the gold is recovered. Based on pricing at \$300/ounce for gold, the value of 6.5 ounces is USD\$1,950.00. This process recovers 6.435 ounces of gold valued at USD\$1,930.50. The cost of refining to recover the gold from the sludge is 20% of the recovered gold or USD\$386.10 yielding a return to the factory of USD\$1,544.40/day. The cost of the Floccin material used is less than USD\$45.00/day. Overall savings has been averaging USD\$1,500.00/day for this one client.

