



# **Genuine Shell Carb (P) Ltd**

## **Gold mining:**

In the field of Gold mining the major use of activated carbon is in gold recovery. Here granular activated carbon is used for adsorption of the gold-cyanide complex in CIP Carbon in Pulp and CIL Carbon in Leach systems, or in columns after a heap leach operation (CIC systems) Carbon in Column . Critical parameters are hardness, gold adsorption kinetics and gold adsorption capacity. Top quality products combine excellent adsorption/desorption characteristics with superior hardness. Our premium coconut shell based carbons have been pre-treated to remove platelets and are amongst the best available on the market. The optimum characteristics of the best shown to full advantage in dedicated gold mines.

There are several variations to the carbon adsorption process including:

### **1. Carbon-In-Column (CIC):**

With carbon-in-column operation, solution flows through a series of fluidized bed columns in an up flow direction. Columns are most frequently open topped, but closed top pressurized columns are occasionally used.

Carbon columns are most commonly used to recover gold and silver from heap leach solutions. The major advantage of fluidized bed carbon columns is their ability to process solutions that contain as much as 2 to 3 wt% solids. Heap leach solutions are frequently high in solids due to fine particle washing from heaps. Down flow carbon columns are rarely used for gold recovery, because they act like sand filters and is subsequently subject to frequent plugging.

### **2. Carbon-In-Pulp (CIP):**

Carbon-in-pulp operation is a variation of the conventional cyanidation process. Ore is crushed, finely ground, and cyanide leached in a series of agitated tanks to solubilize the gold values. Instead of separating solids from the pregnant solution, as in the traditional cyanidation process, granular activated carbon is added to the leached slurry.

The carbon adsorbs the gold from the slurry solution and is removed from the slurry by coarse screening. In practice, this is accomplished by a series of five or six agitated tanks where carbon and ore slurry are contacted in a staged countercurrent manner.

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This greatly increases the possible gold loading onto the carbon while maintaining a high recovery percentage. Carbon is retained within the individual CIP tanks by CIP tank screens. The opening size of the CIP tank screens is such that the finely ground ore particles will pass through the screens, but the coarse carbon will not. Almost every imaginable type of screen has been tried for this application, with some types being much more successful than the rest.

### **3. Carbon-In-Leach (CIL):**

The carbon-in-leach process integrates leaching and carbon-in-pulp into a single unit process operation. Leach tanks are fitted with carbon retention screens and the CIP tanks are eliminated. Carbon is added in leach so that the gold is adsorbed onto carbon almost as soon as it is dissolved by the cyanide solution. The CIL process is frequently used when native carbon is present in the gold ore. This native carbon will absorb the leached gold and prevent its recovery. This phenomenon is referred to commonly as “preg-robbing”. The carbon added in CIL is more active than native carbon, so the gold will be preferentially adsorbed by carbon that can be recovered for stripping. The CIL process will frequently be used in small cyanide mills to reduce the complexity and cost of the circuit.

There are several disadvantages to CIL compared with CIP. Carbon loading will be 20 to 30% less than with CIP, which means more carbon has to be stripped. (This disadvantage may be overcome by a hybrid circuit, incorporating a cross between CIL and CIP.) The CIL process requires a larger carbon inventory in the circuit, which results in a larger in-process tie up of gold. The larger carbon inventory can also result in higher carbon (and gold) losses through carbon attrition.

We are offering GS612GLD and GS816GLD are having high hardness and the low attrition with the relevant adsorption capacity is participation to the excellent quality to the gold recovery process.