

ABSTRACT (C22B)

This invention relates to a hydrometallurgical process for the recovery and separation of valuable precious, base or rare elements such as platinum group metals (PGMs), gold or silver, and other valuable base and rare metals such as nickel, cobalt, copper, rare earth elements (REE), yttrium and scandium, as well as uranium, thorium, manganese, zinc, cadmium, molybdenum, titanium, tin, and other minor elements such as vanadium, germanium and gallium from a feed material comprising ores, concentrates and other materials. In particular, the process comprises quantitative removal of additional base, rare and gangue elements for increased efficiency of further treatment of the solids for valuable metals recovery and/or recycling and/or separation of valuable metals from pressure leach residue and may be integrated into one or more existing valuable element extraction processes.