Nickel – Copper Matte with PGMs Technology

Sherritt has developed process technologies to recover nickel, cobalt, copper and platinum group metals (PGMs) by the application of acid pressure leaching.

Nickel-copper mattes, nickel laterite ores, and mixed nickel-cobalt sulphide precipitates are several examples of the wide range of feed materials commercially processed utilizing Sherritt acid pressure leaching. Seven commercial plants attest to the effectiveness of Sherritt technology for the treatment of nickel-copper mattes containing PGMs, whereby the base metals are sequentially and effectively dissolved, yielding a high grade PGM residue for refining. The base metals dissolved in the acid pressure leach process can be recovered in a number of forms.

Nickel is recovered as metal, either as powder by hydrogen reduction, or as cathode by electrowinning, or as hydrated nickel sulphate by crystallization.

Copper is recovered as cathode, hydrated mixed nickel-copper sulphate, or as a high grade copper sulphide residue.

Cobalt is recovered in pure forms as for nickel, or isolated as a saleable intermediate sulphide or hydroxide precipitate, depending on quantities.