

Eco-Friendly Cyanide Remediation without UV or Sludge

Technology Domain: Chemistry

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Technology Summary:

This invention presents a novel, environmentally friendly, and economical method for degrading cyanide in solutions, primarily industrial wastewater. The key technical solution involves contacting cyanide-containing water with metal peroxides (barium peroxide, strontium peroxide, or their combination). The key inventive feature is the ability of these metal peroxides to effectively degrade cyanide, achieving 97-99.9% removal, even in the absence of light and without generating harmful sludge. This is achieved through the *in-situ* generation of hydrogen peroxide and reactive oxygen species by the metal peroxides, eliminating the need for external energy sources like UV light or additional reagents common in prior art.

As a result, cyanide levels are reduced below the permissible limit of 0.2 ppm, typically within 80 minutes. The use of this invention is critical for industrial effluent treatment (e.g., from mining, steel, electroplating), providing a simple, safe, and highly efficient alternative to conventional, often problematic, cyanide remediation methods.

