



PRODROMOS
T e c h n o l o g i e s

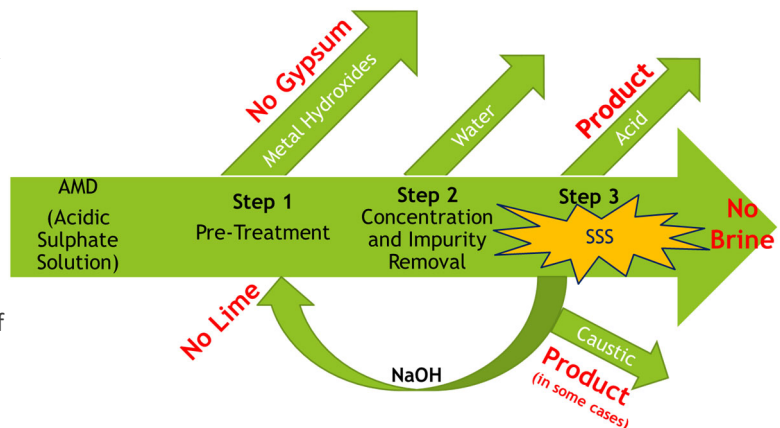
Application of Prodromos SSS Technology

Mine Water Treatment

Prodromos has developed a breakthrough process technology to convert Sodium Sulphate (Na_2SO_4) back to its acid and base components of NaOH and H_2SO_4 . This presents a substantial opportunity in the treatment of excess mine water.

THE OPPORTUNITY

Mine water may be acidic (metal-containing weak sulphuric acid solutions) or neutral with elevated sodium. Traditionally, lime is added to neutralise and precipitate metals. In the process, large volumes of gypsum is co-precipitated forming a waste stream with the metal hydroxides. This is followed by membrane concentration, typically Reverse Osmosis. The brine is either disposed or if Zero Liquid Discharge is required, the go to solution is then evaporation & crystallisation, or freeze desalination.



Our process enables the use of caustic soda (NaOH) instead of lime. No gypsum precipitation! The membrane concentration process can achieve significantly higher recoveries and higher brine concentrations, the brine reporting as sodium sulphate solution after impurity removal.

The sodium sulphate solution is then fed to the salt splitting plant, enabling returning caustic soda for reuse, and making sulphuric acid and excess caustic soda available for potential sales. No residual brine to handle! Towards zero waste discharge.

TECHNOLOGY APPLICATIONS

1. Spent Caustic Treatment
2. Paper & Pulp—Kraft Mills
3. Mine Water Treatment
4. Demineralisation Wastewater
5. Textile Industry—Rayon Manufacturing
6. Hydro-Desulphurisation
7. Flue Gas Desulphurisation

KEY BENEFITS

1. **Environmental**
 - ⇒ Waste Reduction
 - ⇒ No brine to handle
2. **Improved Sustainability**
 - ⇒ Own Input Chemicals from Concentrate
 - ⇒ Circular Economy
 - ⇒ Reduced Reliance on Suppliers
3. **Improved Bottom Line**
 - ⇒ Reduced Waste Disposal Cost
 - ⇒ Reduced Input Chemical Cost
 - ⇒ Additional Marketable Product



Redefining Reality, Providing Possibility
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