

A Proprietary Leaching Technology of



## **Technology Summary**

**Suitable for public dissemination**



*The MoReLeach patent for the potential application of the technology described in the patent for molybdenum and rhenium ores is a significant addition to the range of metals covered by the Company's leaching technology.*

The MoReLeach process, a sister technology to MetaLeach's HyperLeach® technology, is used on molybdenum bearing ores, concentrates and flotation tailings. The HyperLeach® process is a process for the extraction of base metals, especially copper, zinc, nickel and cobalt from sulphidic ores and concentrates.

The technology consists of three major stages i.e. leaching, separation/concentration and recovery. The leaching can occur either in heap or tank and involves contacting the ore/concentrate with a suitable solution of reagent at an appropriate concentration. The separation/concentration and recovery of the metals uses the same ion exchange process as that used in current roasting - acid leach plants to produce the industry standard products, ammonium molybdate and ammonium perrhenate, which can be sold directly to secondary processors. The reagent used can be readily recycled at low cost using conventional technologies.

Using MoReLeach both oxide and sulphide based molybdenum ores can be effectively treated. The reagent used is highly selective for molybdenite and can be used to remove molybdenum from copper flotation concentrates whilst minimising copper loss. This allows realisation of the value of the molybdenum, increases the copper grade and reduces penalties at the copper smelter. The rhenium which is present in all molybdenite deposits will behave in the same way as molybdenum and can be recovered at low additional cost.

## **Appendix**

### **MoReLeach Patent Description**

MetaLeach has been granted a patent for a *Method Oxidative Leaching of Molybdenum - Rhenium Sulphide Ores and/or Concentrates* in Australia, with patents in other countries pending. The patent is directed to the MoReLeach technology, a sister technology to the Company's HyperLeach® technology (patents granted and pending).

The patent describes a method for leaching molybdenum and/or rhenium from a sulphide ore and/or concentrate containing such, the method comprising the steps of:

- Exposing the ore and/or concentrate to an aqueous solution of chlorine-based oxidising species in which the sum of the concentrations of hypochlorite and hypochlorous acid is at least 10mol% of the chlorine-based oxidising species;

- Allowing and/or facilitating the oxidation of the molybdenum and/or rhenium by the hypochlorite and/or hypochlorous acid, thereby decreasing the pH such that the predominant chlorine-based oxidising species becomes chlorine;
- Allowing and/or facilitating the oxidation of the molybdenum and/or rhenium by the chlorine thereby producing a pregnant leach solution; and
- Passing the pregnant leach solution to a means for metal recovery.



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