LIX 54-100 solvent extraction reagent is a water insoluble reagent, which forms hydrocarbon soluble complexes with various metal cations in a manner similar to that shown below for copper:

\[
2RH_{(org)} + Cu^{+2}_{(aq)} \rightleftharpoons R_2Cu_{(org)} + 2H^+_{(aq)}
\]

**TYPICAL USES**
LIX 54-100 was designed and is most commonly used for the extraction of copper from aqueous ammonia leach solutions arising from the ammonia leaching of printed circuit boards, copper scrap, copper alloys, copper/lead dross and certain copper sulfide concentrates.

Because of its low viscosity LIX 54-100 can be operated at copper loadings up to about 35 g/l (35 v/v% reagent) resulting in relatively small solvent extraction circuits when compared to oxime copper extractants.

Copper can be stripped from LIX 54-100 with an aqueous solution whose equilibrium copper concentration is high, but, whose equilibrium acid concentration is low. This allows an operator to tailor the pregnant copper strip solution to the specific needs of the final copper recovery operation.

**TYPICAL PROPERTIES**

**A. Physical Properties:**
- Extractant Appearance: Fluid Amber Liquid
- Specific Gravity (25°C/25°C): 0.95-0.99
- Flash Point\(^1\): Greater than 200°F
- Viscosity @25°C (Kinematic): 10 centipoise
- Copper Complex Solubility: 40 g/l Cu

**B. Performance Specifications\(^2\):**
- Maximum Copper Loading: Not less than 100 g/l Cu
- Extraction Kinetics: 95% (30 seconds)
- Extraction Phase Separation: 120 seconds
- Strip Isotherm Point: 0.10 g/l Cu
- Strip Kinetics: 90% (30 seconds)
- Strip Phase Separation: 90 seconds

\(^1\) The flash point is determined by Setaflash closed cup.

\(^2\) The performance parameters are determined using the Standard Cognis LIX 54 Quality Control Test dated 6/03/93.

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