

CuWRAM PRODUCT DATA SHEET

Purity Systems Inc. Silica Based Technologies for a Cleaner Environment and Advanced Hydrometallurgy/IX

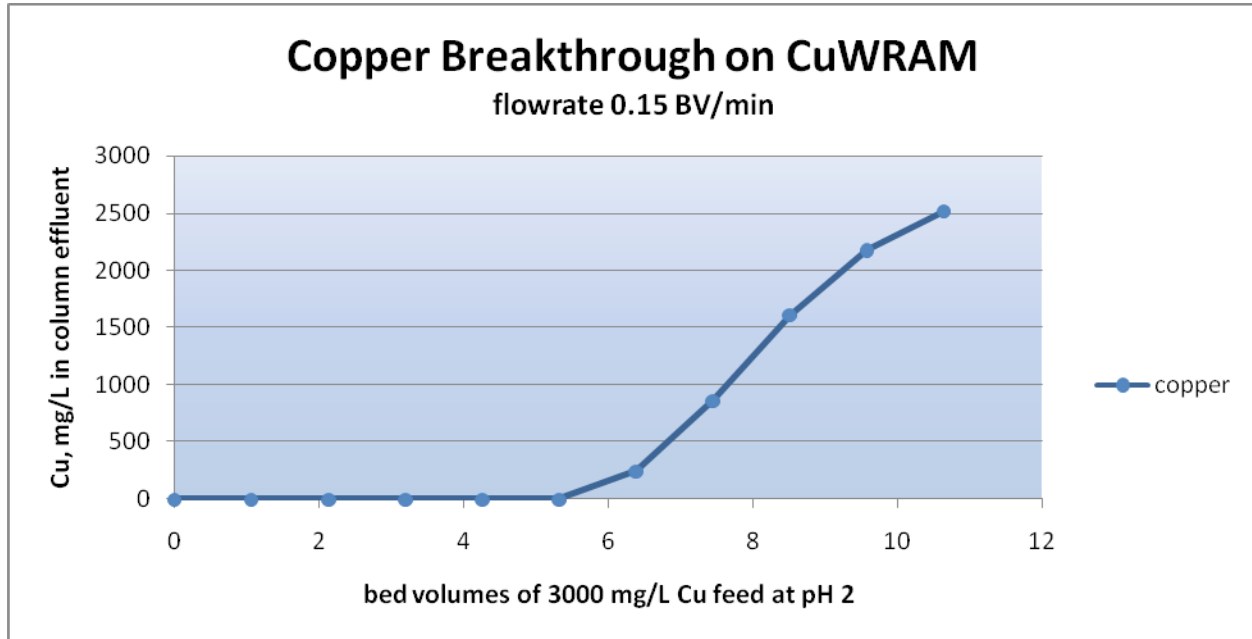
PSI has developed a complete line of metal ion recovery materials for applications in the mining, electroplating and environmental remediation industries. Below are the general characteristics and the range of properties of CuWRAM followed by a summary of standard test results.

Physical and Chemical Characteristics of CuWRAM Purity Systems Silica Polyamine Composite

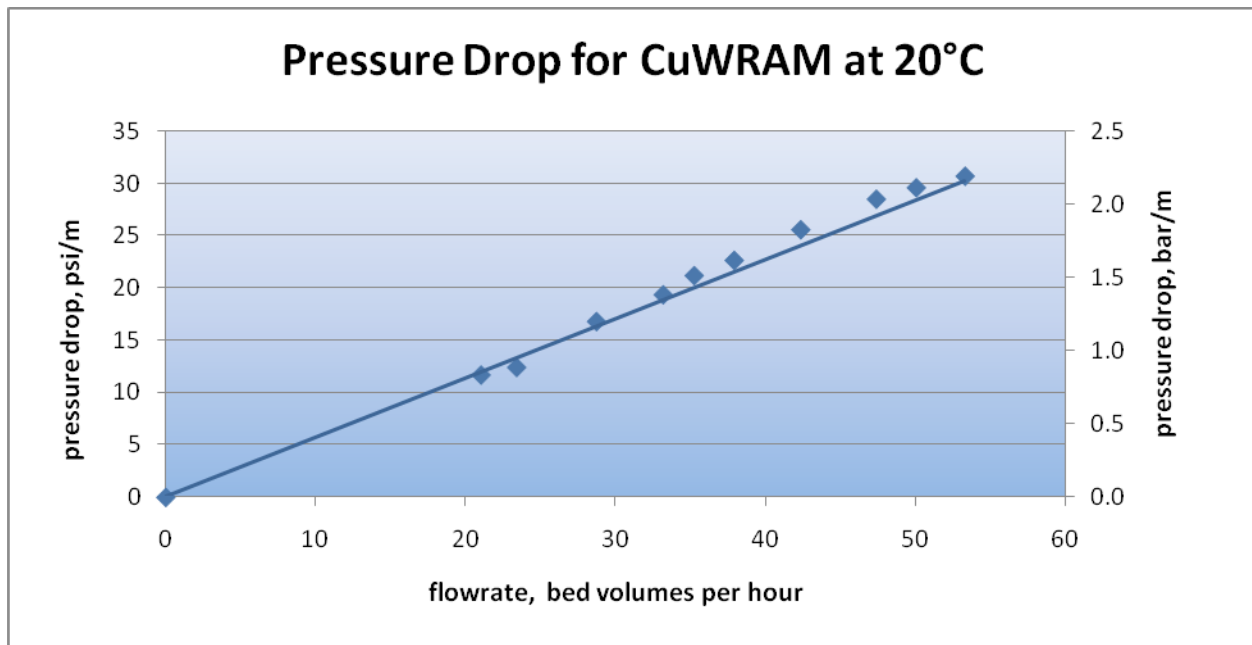
Matrix.....	Modified Hydrophilic Polymers Grafted to Amorphous Silica Gel
Physical Form and Appearance.....	Tan to Reddish-Brown Irregular or Spherical Particles
Functional Groups.....	PAA-Picolyl Chloride
Form (as shipped).....	Acid
Screen Size Range.....	> 90% 150-270 micron
Moisture Content (as shipped).....	< 10 %
Reversible Swelling.....	0%
Specific Gravity (as shipped).....	> 0.55
Total Copper Exchange Capacity (flow at pH = 1.5).....	> 28 g/kg
Maximum Operating Temperature of feed solution (tested so far).....	90°C
pH Range	operating, for copper selectivity: 0.3 to 5.0
Pressure drop at 30 BV/h flow.....	18 psi/m or 1.2 bar/m

Performance Specifications

The graph illustrates the copper capacity of CuWRAM under ideal conditions using a 3000 ppm copper(II) solution at pH 2, loaded and stripped at 0.15 BV/min in a 10 cc column. Flow capacity at 10% breakthrough is 32 g/kg or 20 g/L at pH 2.



The graph shows the pressure drop per meter of CuWRAM as a function of flowrate at 20°C. A flowrate of 30 bed volumes per hour produces a pressure drop of 18 psi/meter, or 1.2 bar/meter.



Basic Product Warranty

The product will conform to the specifications that were tested under the seller's own standard conditions (see figures above). The actual performance will vary according to the conditions of use.