

ISTN

<http://www.istninc.com>

CSMG – SA™ Water Treatment Reactive Adsorbent

Company Information

Industrial Science & Technology Network, Inc. (ISTN Inc.) is a US-based Research and Development company with extensive knowledge in Nanotechnology. ISTN Inc. was founded in 1997 by Dr. Arthur Yang, and has since received many US and International grants and contracts for R&D in Nanotechnology. The company has over 10 years of R&D experience in organic-inorganic nanostructures. Researchers at ISTN Inc. are experts in customized water treatment technologies and optical functional coatings. We also actively conduct biotechnology research in the fields of Drug Delivery and Enzyme Immobilization Technologies. ISTN Inc. works very closely with our customers to provide the ideal customized solution.

Highly Efficient Adsorbent for Low-Level Contaminated Water

CSMG™ refers to the family of extremely efficient *reactive adsorbents* that selectively removes heavy metal ions and precious metal ions from contaminated aqueous water streams. This innovative platform technology from ISTN Inc. utilizes nanotechnology to integrate high-efficiency adsorption, high-capacity and rate-accelerating catalysis into one structure. CSMG™ treatment system designs are flexible and allow maximum usage customization.

CSMG-SA™ Product Description

CSMG-SA™ is produced by embedding specially prepared inorganic-based nanocrystals in composite structure comprising of a polymeric binder and high surface area nanoporous silica. CSMG-SA™ water treatment media is an excellent selective adsorbent that allows flexibility in treatment system designs for maximum usage customization. For heavy metals such as cadmium and lead, the nanocomposite performs well at low concentrations of the metal ions compared to conventional ion-exchange resins or carbon black adsorbents. The reactants formed within the composite are also generally more stable to leaching.

CSMG-SA™ Technical Data		
	Adsorption (mg/g)* at Eq.	Efficient Treatment Level
Pb ²⁺	116	< 1 ppm
Cd ²⁺	30	< 1 ppm
Zn ²⁺	34	< 1 ppm
Cu ²⁺	43	< 1 ppm

* Calculated mg of metal adsorbed per g of dried CSMG-SA™



CSMG-SA™ beads showing color change after adsorption

CSMG-SA™ Product Features

- Selective adsorbent for heavy metal treatment formulated to treat Lead, Cadmium, Zinc, and Copper contaminated water
- Adsorption capacity not wasted on non-targeted metal ions
- Highly efficient adsorbent ideal for drinking water and industrial water treatment that require neutral pH discharge
- Less vulnerable to acidic attack after adsorption by the sacrificial release of calcium ions

CSMG™ Technology is patented in the United States, Australia, and China. Other US and International Patents are pending.

ISTN Inc. continues to develop and improve CSMG™ technology for additional adsorption capabilities and treatment applications. It also actively seeks additional development partners to broaden the scope of this technology.

ISTN Inc. Contacts

BUSINESS INQUIRIES:

Hans Lee
Business Development Manager

INDUSTRIAL SCIENCE & TECHNOLOGY NETWORK, INC.

2101 Pennsylvania Ave. York, PA 17404, USA
Phone: +1 717 843 0300
Fax: +1 717 843 0705
E-mail: sales@istninc.com

TECHNICAL INQUIRIES:

Roman Domszy, Ph.D.
Research Scientist