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New Foam Insulation Certified as “Green” with Low Emissions

SUWANEE, GA - A new spray foam insulation has achieved MAS Certified Green® certification, following an objective analysis by Materials Analytical Services (MAS) in Atlanta.

The new nanocomposite material called HYBRIDSIL® Foam Insulation is compliant with the performance standard established for low-emitting insulation/sealants under the California Department of Public Health (CDPH) Standard Method Version 1.1. CDPH provides the benchmark criteria adopted in green building programs such as Green Globes, LEED and the Collaborative for High Performance Schools, each of which offers credit for the use of low-Volatile Organic Compounds (VOC) emitting materials to improve indoor air quality.

HYBRIDSIL foam insulation, developed by NanoSonic, Inc., a high technology company located in southwestern Virginia, is a two-part spray foam, low-VOC, non-halogenated, silicon-based insulation coating designed to replace spray polyurethane foam (SPF) coatings that can pose environmental hazards, according to the U.S. Environmental Protection Agency (EPA). Research and development for this new HYBRIDSIL foam insulation was funded by the EPA’s Small Business Innovation Research (SBIR) program, in part, to find an alternative to existing SPFs.

HYBRIDSIL’s non-isocyanate composition can eliminate or significantly reduce the risks to safety and health from potentially harmful isocyanates - the key ingredient in SPF, identified by the EPA to possibly cause adverse health effects such as asthma. Also, current fire retardants in spray foam and other insulation materials are mostly halogenated or brominated compounds that can produce harmful toxins if burned, unlike HYBRIDSIL.

HYBRIDSIL provides a nanocomposite foam structure with thermal and sound insulation comparable to existing foam insulations, as well as validated fire resistance, bio-fouling resistance, and mechanical durability.

Applied by using conventional equipment, HYBRIDSIL foam expands within seconds to provide lightweight coatings that permeate wall cavities to provide thermal insulation and air sealing, thus reducing energy consumption without introducing potential air pollutants.

Based on energy savings, alone, spray foam insulations are considered to pay for themselves in approximately two years because of their high thermal performance. This makes them attractive for use in buildings that in the U.S. consume approximately 40 percent of all energy use. In fact, space heating, ventilation, and cooling (HVAC) account for the largest amount of end-use energy consumption in both



commercial and residential buildings, according to the Center for Climate and Energy Solutions. Insulation in the building envelope helps mitigate such HVAC energy consumption as it improves the thermal barrier, lowering the amount of energy required to maintain thermal comfort in a building.

While HYBRIDSIL foam insulation material is still in development and undergoing further tests, these early results show a product with superior insulation performance, flame resistance, elimination of halogens, elimination or reduction of potential worker hazards associated with isocyanates, contribution to green building credits, ease of application and reliable performance.

Programs such as MAS Certified Green delineate low-VOC emitting products in the marketplace so that purchasers and specifiers can identify and select products that meet healthier interior green building standards. HYBRIDSIL Foam Insulation is an appropriate choice for “green” buildings where high indoor air quality, especially with improved thermal performance, is desired.

Currently, NanoSonic has a pilot-scale manufacturing facility that is capable of producing more than 8,000 pounds of HYBRIDSIL resin per day.

About NanoSonic

Nanosonic, located in Southwest Virginia, specializes in the design and manufacture of innovative materials, especially new materials that are currently unavailable in the commercial market. NanoSonic materials are designed with novel and useful engineering constitutive behaviors, using environmentally benign processes. The company won an R&D 100 Award in 2011 for HYBRIDSIL® Fire/Blast. In 2007, NanoSonic won an R&D 100 Award for Metal Rubber™, an electrically conductive and flexible elastomer that can be mechanically strained to greater than 1000 percent of its original dimensions while remaining electrically conductive.

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Further Online Resources:

NanoSonic, Inc. www.nanosonic.com
EPA SBIR Program <http://www.epa.gov/ncer/sbir/>
MAS Certified Green Products List www.mascertifiedgreen.com/products.html#H
MAS Certified Green www.mascertifiedgreen.com/
CDPH Indoor Air Quality Standard www.cal-iaq.org/vocs/standard-method-for-voc-emissions-testing-and-evaluation
Center for Climate and Energy Solutions <http://www.c2es.org/technology/factsheet/BuildingEnvelope>



Chad Nadeau of NanoSonic holds a sample of HYBRIDSIL spray foam insulation that achieved MAS Certified Green® in August 2012.



HYBRIDSIL spray foam insulation is a certified low-emissions product that contains no halogens, no isocyanates, minimal smoke toxicity and has validated fire resistance.