ENVIRONMENTALLY FRIENDLY, HIGH PERFORMANCE HYBRIDSHIELD COATINGS AND FOAMS FOR MARINE, AUTOMOTIVE, AND CONSTRUCTION APPLICATIONS

NanoSonic, Inc.

www.nanosonic.com
Vince Baranauskas, Ph.D., Chief Technical Officer
Michelle Berg, International Product Development
Richard Claus, Ph.D., President

NANOSONIC, INC. 1998

1. 1998 - Founded by Dr. Richard Claus Delaware C Corp., Blacksburg, VA
2. Awarded Top Small Business in VA
3. Top 5 Small Business at DARPATech
4. Top 13 NASA Nanostructured Products
5. R&D 100 2007 – Metal Rubber
6. R&D 100 2011 - HybridSil® Fire/Blast
7. Micro/Nano 25 – Metal Rubber Fabric
8. 2009 – Transition from R&D to products
9. 2010 – New Manufacturing Facility

NanoSonic
PROPRIETAR

NanoSonic, Inc.

- Founded in 1998 in Blacksburg, VA to develop next-generation nanostructured materials
- Today – 30,000 sq. ft. R&D and Manufacturing Facility
- 3 Core Competencies:
  - Advanced Polymers
  - Nanocomposites
  - Sensors & Systems
- Vertically integrated R&D, Pilot Scale-Up, and Product Distribution (MRL 5)

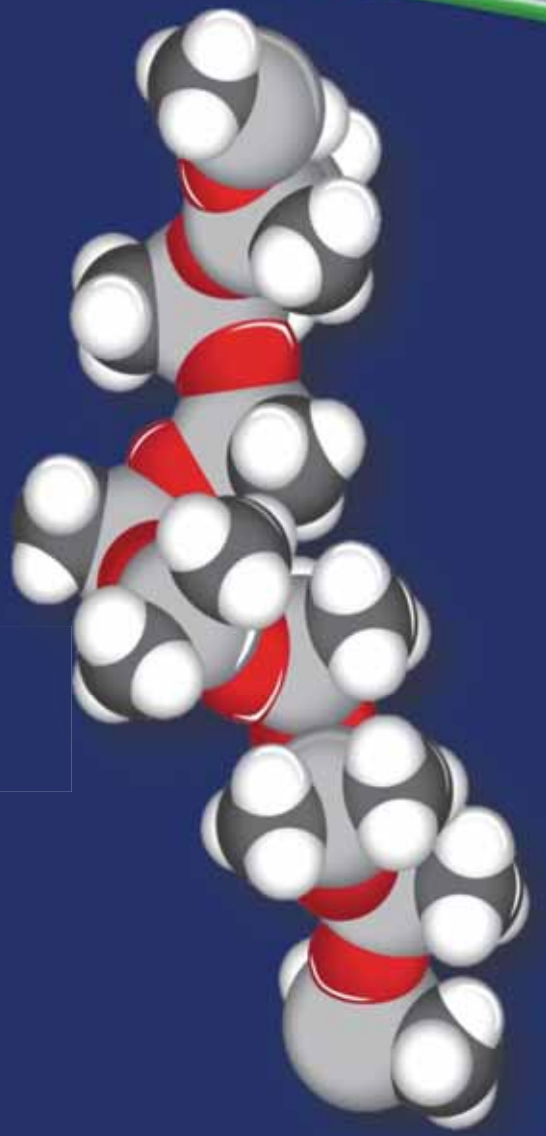
SUSTAINABILITY

- LEED Green Building
- Green Engineering
- Non-Toxic Products
- Community

HYBRIDSHIELD® TECHNOLOGY

HIGH PERFORMANCE NANOCOMPOSITES

- Inorganic Copolymer Thermosets with Tailorable Polymeric and Nanoparticle Interactions
- Synergy of Polymer & Ceramic Properties for Unique Protective Capabilities
- Extreme Environmental Durability
- Pilot Scale Manufacturing



LARGE SCALE PRODUCTION OF NANOCOMPOSITE COATINGS, FOAMS, COMPOSITES, AND SENSORS

PRODUCTS LAUNCHED ON NEW WEBSITE STORE WWW.NANOSONIC.COM

3D PATTERNED HYBRIDSHIELD THERMAL ARRAY FABRICS

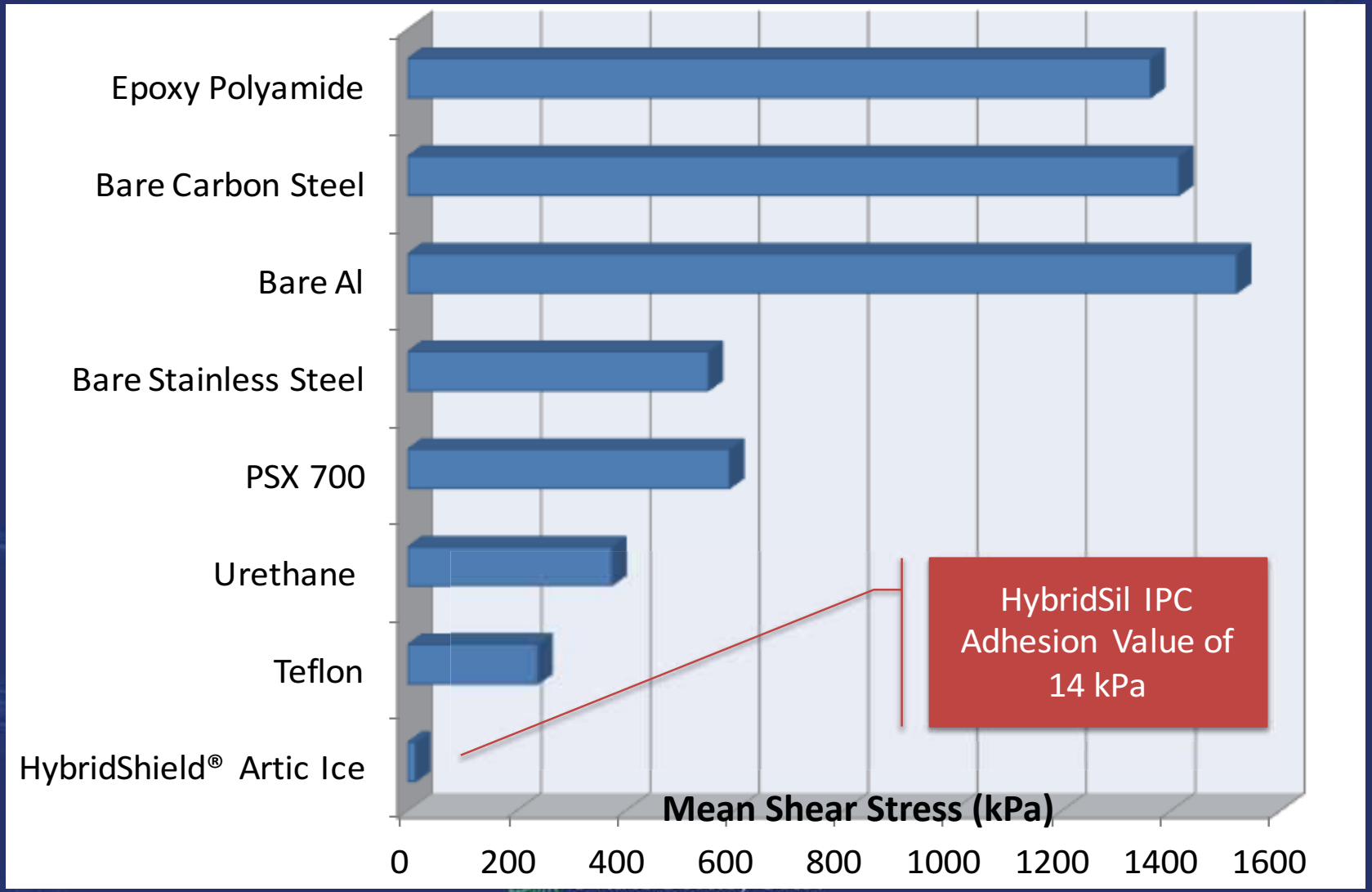
NFPA 1971 Certified Flex-Tuff HS
Structural Fire Protective Glove

HYBRIDSHIELD ICEPHOBIC COATINGS

HYBRIDSHIELD ICE PROTECTION

- One part, spray deposited coating
- Fluorinated, segmented polyorganosiloxanes with marine and aerospace durability
- Moisture induced room temperature crosslinking with tailorable reactivity
- Low modulus, crosslinked thermoset coating

HYBRIDSHILED® ICEPHOBIC HAS CRREL VALIDATED ICEPHOBICITY



HYBRIDSHIELD ANTICORROSION COATING

MOISTURE CURED, SINGLE COMPONENT LOW-VOC RESIN

- Improved environmental durability (laboratory and environmental over legacy MIL-PRF-24635)
- Reduced moisture / ion permeation for improved corrosion protection
- Three orders of magnitude reduced VOCs; “green chemistry”
- Self priming adhesion for ½ coating weight

HYBRIDSHIELD ANTICORROSION CORROSION PROTECTION

- > 3 Years of Environmental Exposure on Air Intake Screen of Marine Vessel
- ASTM B 117 Salt Fog Corrosion Testing (>2,000 hours)
- ASTM G 44 Alternative Alternate Immersion in Neutral 3.5% Sodium Chloride Solution
- ASTM G 155 and 154 Accelerated Weathering
- GMW14872 Accelerated Corrosion
- GMW14872 Cyclic Corrosion
- ASTM D1654 at Oceanic Test Site

HYBRIDSHIELD POLYSILOXANE FOAM TECHNOLOGY

NEXT-GENERATION HYBRIDSHIELD POLYSILOXANE FOAMS

- Ultra low glass transition temperatures and viscoelastic properties for energy absorbing applications
- Extreme, non-halogenated fire resistance
- Negligible smoke toxicity
- Tailorable mechanical properties
- Scalable, adaptable manufacturing (pour, injection molding, spray)

EXCEPTIONAL ENERGY ABSORBING PROTECTION FOR AUTOMOTIVE, MARINE, AND AEROSPACE APPLICATIONS

FMVSS 201U HEAD IMPACT PROTECTION

HIGH EFFICIENCY AUTOMOTIVE, MARINE, AND AEROSPACE PART MANUFACTURING

PROPANE TORCH EXPOSURE OF FIRE RESISTANT POLYURETHANE SEAT CUSHION

FIRE RESISTANCE TESTING OF HYBRIDSHIELD POLYSILOXANE FOAM

ACKNOWLEDGEMENTS

VIRGINIA ECONOMIC DEVELOPMENT PARTNERSHIP (VEDP)
GILES COUNTY
COMMERCIALIZATION PARTNERS