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VINATRONICS TECHNICAL BRIEF: Nomex® Brand Fiber Fire Resistant (FR) Fabric and ANSI 107 and 207 High Visibility Apparel Garments. Page 1 of 1

Introduction: For select workers in high fire and flame risk industries such as; Municipal Fire Departments, Hazardous First Response Teams, Electrical High Voltage workers, Oil and Gasoline Refineries, Steel and other Molten Metals Industries, and Chemical Industries; the use of the highest levels of Fire Resistant Apparel is an on-the-job requirement. Safety Professionals in these high risk environments sometimes specify Nomex® Brand Fiber Fire Resistant (FR) Fabrics as the only FR fabric approved on the job site due to the confidence in the name brand and extensive Fire Resistant testing performed by the American Society for Testing and Materials (ASTM). For workers in these high fire and flame risk environments whose PRIMARY danger is Fire, finding the right High Visibility Garment that includes appropriate “FR” protection is challenging. The Forward section of the ANSI 107-2004 acknowledges fluorescent dyes may be incompatible with some FR coatings.. Specifically, for those environments where Nomex® has been identified by the OSHA “Competent Person” as the Fire Resistant fabric of choice, Vinatronics offers “Best Practices, ANSI-Style Class 2 Standard and Break-Away Fire Resistant Safety Vests in Contractors Orange Nomex® brand fiber. This Technical Brief is written to assist our Customers in understanding the relevant Nomex® ASTM testing, and to help these high fire and flame risk customers understand the characteristics of Vinatronics High Visibility Apparel made with Nomex® Brand Fiber for their work conditions.

Nomex® Brand Fiber in “Contractors Orange”: .Nomex® Brand Fiber Fire Resistant fabrics have a high level of customer acceptance in High Risk Fire and Flame work environments. Nomex® fabrics, including the “Contractors Orange” Vinatronics uses to make FR High Visibility Apparel, has been extensively tested by the American Society for Testing and Materials (ASTM) and has a Arc Thermal Performance Value (ATPV) of 4.6. Nomex® therefore enjoys a high confidence level in Fire and Flame Resistance, but is one of the FR fabrics that resists fluorescent dyes. Nomex® fabric in “Contractors Orange” color approximates the desired ANSI fluorescent Orange; but, due to the incompatibility of the fluorescent dyes and FR coatings, is not bright enough to meet ANSI 3rd party tests for visibility. Vinatronics High Visibility Apparel produces Standard and “Break-Away” Nomex® Electrical Safety Vests that are ANSI-Style, “Best Practices”, and are designed for workers whose PRIMARY danger in these work environments is Fire, Flame or Electrocution.

Nomex® Brand Fiber ASTM Testing:

Thermal Testing is used to determine whether a fabric will ignite and burn after exposure to fire and flames. Nomex® fabrics have been extensively tested by the American Society of Testing and Materials (ASTM) to establish Fire Resistance in a number of conditions. The ASTM tests include, but are not limited to, the following:

- Thermo-Man® Test - ASTM F1930
- Vertical Flammability Test - ASTM D-6413
- Thermal Protective Performance Test - ASTM D4108-87
- Radiant Protective Performance - ASTM F1939-99A
- Mannequin Test - ASTM F1930-99
- Ignitability by Electric Arc Exposure - ASTM F1958
- Arc Thermal Performance Value - ASTM F1959

In addition to the ASTM Thermal Tests above, a standard Dupont™ “Material Safety Data Sheet” (MSDS) is available defining the characteristics of Nomex® Brand Fiber Fabrics. To request this information call Vinatronics at 1-206-762-7410.

Dielectric Snaps, Velcro, and Reflective:

“Best Practices” in Vinatronics FR garments include Dielectric, Arc Resistant zippers and snaps. Zippers and snaps are, at times, combined with FR Velcro “Break-Away” sides and shoulders for an extra level of safety. For Nomex® Fire Resistant Safety Vests, Vinatronics uses FR two inch silver 3M™ Scotchlite™ Reflective Material. The FR reflective meets ASTM F1959, NFPA 70E for arc (ATPV11.0), NFPA 1971, and NFPA 1951, 2007 edition for flame and heat resistance. Dielectric snaps, FR Velcro, and FR reflective are the current Flame Resistant “Best Practices” available to combine with Nomex® fabric.

Why “Made in the USA” matters:

Vinatronics High Visibility Apparel includes multiple Garment Labels to protect workers from misrepresentation. Vinatronics Nomex® garments will include a specific Nomex® tag. Vinatronics safety apparel may include a combination of ANSI, ASTM, NFPA fabrics and reflective. As an ethical “Made in the USA” manufacturer, every effort is made to present the qualities of our garments accurately, however, the OSHA Competent Person is encouraged to read and understand the ANSI, NFPA and or ASTM standards and testing methods as listed to insure the Vinatronics garment is appropriate for your work environment.

DISCLAIMER: This summary and appendix is provided for Vinatronics sales and customer service informational purposes only. Please refer to the original MUTCD, OSHA, ANSI, NFPA, and ASTM documents and all supporting Appendixes for complete information on compliance. As a technical summary, the completeness and/or accuracy of this information is neither expressed nor implied.