Date: 08/02/22

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

FCC ID: 2ASYD-VT-F-010-V2

# Enclosure Attestation

To whom it may concern,

The Vitls Tego (Product Code: -VT-F-010-V2) is a rigid-flex PCB device powered by a 3V battery and enclosed in a foam material (Sekisui Volara Type EO). The following is an excerpt from Sekisui Volara Type EO technical data sheet:

*Volara Type EO foams are flexible, soft to the touch, closed cell EVA copolymer based materials. Type EO foams are ideally suited for use in medical devices and in applications designed for skin and food contact. The conformability and softness of type EO combined with the strength and toughness of a crosslinked EVA copolymer, has made this grade of foam one of the most recognized double sided foam tape substrates in North America.*

EVA stands for ethylene-vinyl acetate. EVA is a material often used as an electrical insulator for electrical cables and photovoltaic encapsulation, along with medical device wearable enclosures. The EVA blend from Sekisui does not contain any conductive fillers and has a resistivity greater than $10^{12}$ Ohms and electrical conductivity of ~ $10^{-10}$ S/cm at $10^{3}$ Hz. EVA is often mixed with multiwalled carbon nanotubes (MWCNT) to modify its rheological and electrical characteristics. The result of MWCNT additives at different weight percentages are shown below.

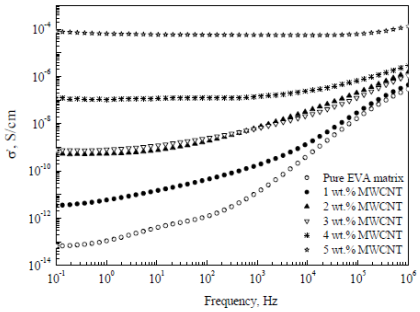
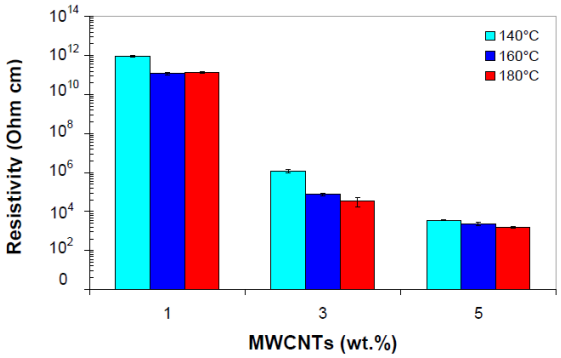



Fig. 3. The dependence of the electrical conductivity σ' on frequency for neat polymer matrix, and investigated composites containing from 1 to 5 wt.% MWCNT.



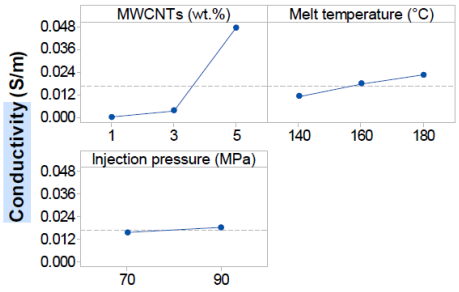




**Figure 14.** Main effect plots for electrical conductivity of EVA/MWCNT composite.

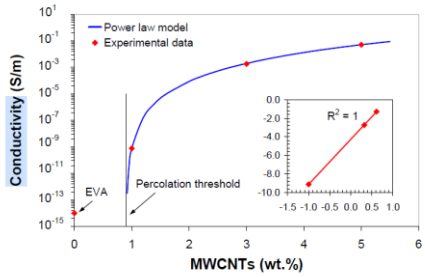
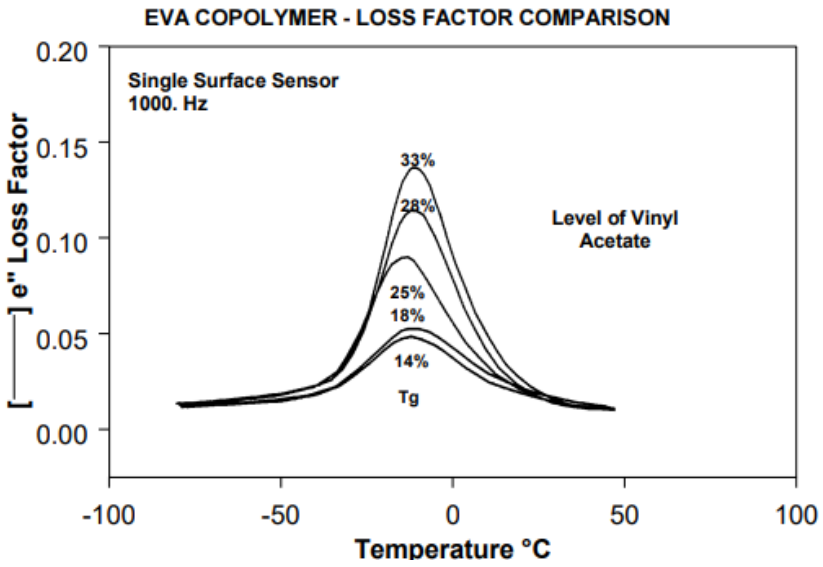


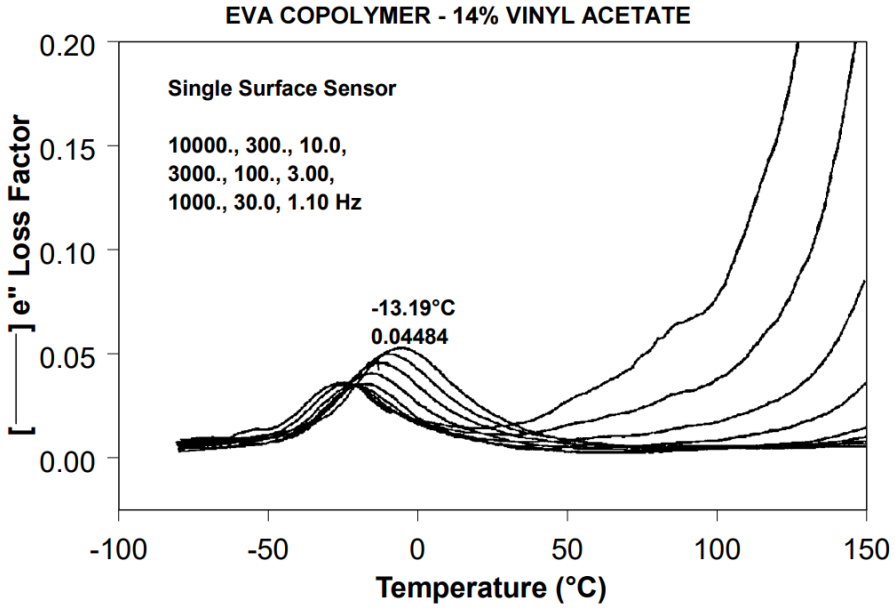

**Figure 15.** Variation of electrical conductivity as a function of MWCNT wt.% (Experimental data correspond to the optimum injection molding parameters).

The Volara Type EO is adhered around the rigid-flex PCB of the Tego, there is no access to the debug port on the rigid-flex PCB in order to configure the Tego for certain modes and RF output (i.e. what BLE channel and power output to transmit on). Therefore, testing for Spurious Radiated Emissions must be completed without the enclosure of the Tego.

The Volar Type EO has the following loss factor, which depends on the vinyl acetate composition:




At room temperature (~24°C) to 50°C, the dielectric loss factor is approximately 0, regardless of vinyl acetate composition. The ideal material for our application has an approximately 0 loss factor, meaning virtually no absorption of electromagnetic waves. This loss factor is also not significantly affected by frequency of waves passing through material,



These test results were conducted on standard EVA material (conducted by TA Instruments, https://www.tainstruments.com/pdf/literature/TA107.pdf) , and the vinyl-acetate composition of Volara Type EO is a trade secret.

Since the top foam has negligible absorption of electromagnetic waves, and since design of the Vitls Tego inhibits access to the debug port with enclosure, we have conducted our Spurious Radiated Emissions testing without an enclosure.

Sincerely,

Mohamed Elmahdy
EVP - Product