Device Biocompatibility of the Wearable Sensor Glove

The wearable sensor glove is a measurement device that is worn on the subject's hand as one would wear a normal glove. The wearable glove will be attached to the subject's hand using an elastic band to prevent the glove from falling off. The measurement device non-invasively measures the physical interactions between the subject's hand and their surroundings and it will do so by measuring the pressure, temperature, and strain through the wearable glove. All sensors of the measurement device are located on the exterior of the glove and do not come in contact with the subject's skin. The device will be made from a wearable fabric as seen in the following referenced papers: [1] and [2]. The fabric of the glove is the only material that comes in contact with the subject's skin.

This measurement device is worn by the subject for a limited amount of time: 2 hours. This surface device interacts with intact skin only. In regard to cytotoxicity, sensitivity, and irritation, this measurement device will be using an off-the-shelf fabric glove, similar to the one used in the following referenced papers: [1] and [2]. Additionally, subjects will be selected to ensure that they are not allergic to the fabric of the glove.

References:

[1] Francés, Leire et al. "Design and Development of a Low-Cost Wearable Glove to Track Forces Exerted by Workers in Car Assembly Lines." *Sensors (Basel, Switzerland)* vol. 19,2 296. 13 Jan. 2019, doi:10.3390/s19020296

[2] Hughes, J., Spielberg, A., Chounlakone, M., Chang, G., Matusik, W. and Rus, D. (2020), A Simple, Inexpensive, Wearable Glove with Hybrid Resistive-Pressure Sensors for Computational Sensing, Proprioception, and Task Identification. Adv. Intell. Syst., 2: 2000002. doi:10.1002/aisy.202000002