

Abstract Submitted  
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**Laser Laboratory for Energetic** EDWARD POGOZELSKI, DAVID ABRAMO, LEE PAPASERGI, BRENDAN SEE, CHRISTINA KEIFFER, SUNY GENESEO TEAM — Silk from the spider *Steatoda Triangulosa* is used to mechanically support direct-drive laser fusion targets at the Lab for Laser Energetics (LLE) in Rochester, NY. Using superglue, each target is suspended from 4 dragline samples, each of which consists of a pair of cylindrical lines. Empty targets are first attached to the silk, and then filled with fuel (deuterium, tritium, or a mixture of the two) over a long time period. During the filling process for cryo-DT targets, the silk is subjected to doses of beta radiation of approximately 100 Mrad. To examine the impact of radiation on silk strength, samples of silk were exposed to doses of beta radiation (ranging from several Mrad through several Grad). The strength of the irradiated samples was compared to the strength of unirradiated samples. It was found that there is no measurable impact on strength for doses less than 10Mrad, and that silk strength decreases logrhythmically for doses larger than that. For the dose of interest (100 Mrad), the strength of the silk is found to be reduced by about 25%, indicating that the use of spider silk for cryo-DT targets is still a viable option.

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