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Measurements of absolute infrared absorption on condensed deuterium-tritide from 2400-3400 cm^{-1} J.D. SATER, LLNL, D.N. BITTNER, Schafer Corporation, J.W. PIPES, LLNL — The current point design for the indirect drive hohlraum target requires a smooth DT ice layer at 1.5 K below the triple point. Previous experiments have shown that the DT ice roughness increases with lower temperature due to cracking of the ice and facet formation. Infrared enhanced layering has been shown to effectively suppress the increase in surface roughening as the temperature lowers well below the triple point. Infrared laser power absorption occurs in both the DT ice as well as the surrounding shell. The best choice for IR laser frequency is the one giving the maximum absorption in the ice and the minimum absorption in the shell. Accurate knowledge of the absolute absorption spectrum of D-T in the 2.5-4.0 μm region is essential for choosing the best frequency. Previous work has accurately determined the positions but not the magnitude of the major lines [P. C. Souers, 1986]. We will present absorption measurements made on condensed D-T with a Fourier transform infrared spectrometer. Implications of the measured results on the choice of capsule materials and fundamental limits of enhanced layering will be discussed. Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48 and by Schafer Corporation under contract number DE-AC03-01SF2260.

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