Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Chemical Dissociation of Cyclohexane under Shock Loading
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We present a study of the chemical dissociation process in the ringed hydrocarbon cyclohexane under shock loading. Cyclohexane was subjected to shock loading in the pressure range of 12 GPa to 39 GPa. The dissociation was observed using double pass optical absorption spectroscopy. We observed the onset of dissociation as the shock pressure was increased. A strong wavelength dependence was observed in the absorption first beginning at 650 nm and eventually at 400 nm at 39 GPa. The absorption mechanism is is suggestive of Mie scattering of fine carbon particles. The kinetics of the dissociation and the formation of the carbon particles will be discussed.

This work was performed under the auspices of the U.S. Department of Energy by University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.

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Date submitted: 20 Nov 2006 Electronic form version 1.4