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Radiation-induced Damage of Explosives at Ambient and High Pressure. Hubertus Giefers, Michael Pravica, Malcolm Nicol, High Pressure Science and Engineering Center, Dept. of Physics, Univ. of Nevada Las Vegas, Las Vegas, NV 89154.

We have investigated radiation-induced decomposition of PETN (pentaerythritol tetranitrate) and TATB (triamino trinitrobenzene) in a diamond anvil cell at ambient temperature and at variable pressures using white synchrotron x-ray radiation from the 16 BM-D beamline at the Advanced Photon Source. We present evidence of a dramatic slowing of the decomposition rate of TATB when pressurized to 5.9 GPa. The measurements were highly reproducible and allowed us to obtain decomposition rates and the order parameters of the reactions.