7. Processes according to claim 1 wherein the thermite mixture additionally contains an element selected from the group consisting of nickel, iron, cobalt, boron, carbon, silicon, aluminum, titanium, zirconium, hafnium, vanadium, niobium, tantalum, molybdenum, tungsten, rhenium, copper, and mixtures thereof in their metallic form or as compounds thereof capable of metallothermic reduction.

8. Processes according to claim 1, wherein after vacuum-degassing and before ignition, the pressure within the vacuum vessel is increased up to about 200 mbar by introduction of a non-nitrogenous gas.