

Abstract Submitted
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Survival Probabilities in hot fusion reactions WALTER LOVE-
LAND, DONALD PETERSON, Oregon State University — The reported cross
sections for the formation of superheavy elements in hot fusion reactions of ^{48}Ca
with actinide target nuclei decrease modestly in going from element 113 to element
118. This robust behavior is attributed to increasing survival probabilities of the
product nuclei as one gets closer to $Z=114$ or $N=184$. The real situation is compli-
cated with the fused systems starting at excitation energies of 30-50 MeV where shell
effects on Γ_n/Γ_f are not important but where dissipative effects may retard fission
and ending at excitation energies where shell effects are very important. We demon-
strate how these effects occur in the de-excitation of ^{258}No excited to $E^*=61$ MeV by
combining measurements of the neutrons emitted in this reaction with evaporation
residue measurements.

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