

# Data from AR\_0205C3AA9DE10F327900843C6322500C\_1.ens

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## Contents

[29820](#) COMMENTS

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**<sup>298</sup>120** **Comments** **200904**

Published: 2000 ENSDF.

**Title:** Ensdf Update For <sup>298</sup>120.

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**Abstract:** The ENSDF file corresponding to Nuclear Data Sheets for A=266-294 ([2005Gu33](#)) has been extended to include the recently reported attempt at the production of <sup>298</sup>120 and its daughters by [2009Og02](#).

See [2005Gu33](#) for acronyms and notations and evaluation methodology used in this evaluation. The purpose of this evaluation is to present the "best" set of nuclear properties for those nuclides reported between A=266 and A=294 based on data currently available and not to establish a priority of discovery for any element.

**Cutoff Date:** April 14, 2009. All references relevant to the production of <sup>298</sup>120 or its daughters entered into the Nuclear Science References File, papers and private communications received by this date were considered.

**Citation:** ENSDF.

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**<sup>298</sup>120** **Adopted Levels: Not Observed** **200904**

Published: 2000 ENSDF.

**Q:**from theory. See Nuclear Science References.

### History

Type	Author	Citation	Cutoff Date

## Full evaluation M. Gupta ENSDF 14-Apr-2009

[2009Og02](#): Attempt at direct synthesis using the reaction  $^{244}\text{Pu}(^{58}\text{Fe},4n)$  at  $E_{\text{Lab}}=330.4$  MeV corresponding to an excitation energy of  $E^*=45.5$  MeV in the compound system. An  $E_{\text{ex}}=40$  to 45 MeV was expected to provide the optimum yield for both the 3n ( $^{299}\text{120}$ ) and 4n channels. The experiment was performed at Dubna from January to March 2007 using the U400 cyclotron and the DGFRS apparatus. The detection efficiency for full energy  $\alpha$  particles was 87%. A total beam dose of  $7.1 \times 10^{18}$   $^{58}\text{Fe}$  ions was accumulated. The sensitivity of the experiment corresponded to 0.4 pb for the one-event cross-section. The range for the 84% upper limit cross-section was 0.7 pb (only statistical uncertainties) to 1.1 pb (including other experimental uncertainties). The tof of the recoils to the focal plane of the separator was about 1  $\mu\text{sec}$ . The experimenters state that this is shorter than the half-lives predicted for the  $\alpha$ -decay of  $^{299}\text{120}$  and  $^{298}\text{120}$  as listed in Table 1, assuming that  $\alpha$  emission is the preferred decay mode. It would be therefore be reasonable to assume that the entire decay chain would be registered in the focal plane detectors. Daughter decays were expected to be detected during a 30 sec beam off interval triggered by a recoil signal within the energy range of 6.5 to 18.5 MeV.

No correlated EVR- $\alpha$  or EVR-SF events were detected in either the beam off or beam on condition, which could be attributed to this nucleus within the stated experimental sensitivity of 0.4 pb corresponding to the one-event cross-section.

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