

The Accelerator Mass Spectrometry (AMS) Carbon-14 dating of ancient manuscripts concerns mainly two materials: Papyrus and Parchment. Between half a milligram and one milligram of Carbon obtained from the original indigenous organic material must be used. Papyrus is fairly homogenous and uniform since only the pith of the plant is used. Only 15 milligrams of papyrus manuscript is required for AMS Carbon-14 (C-14) dating.

Parchment is derived from animal skin. Research from a particular Codex manuscript reveals that only about three milligrams of this material was required. University of Michigan inv. no. 33 (P. J. Sijpesteijn, Bulletin of the American Society of Papyrologists 31 [1994] 121-24) was tested by AMS C-14 dating by the University of Arizona Accelerator Laboratory and the result reported to the author in September of 1993.¹ This is an early 4th century AD Codex Parchment text. A portion of this (350 square millimeters weighing about 53 milligrams) was sent as a sample to the Laboratory which used only a 2.55 milligram (mg) portion and obtained .926 mg of Carbon. Hence 3 mgs of Parchment could suffice for AMS C-14 testing but parchments may vary in condition. Certain parchments may have a greatly increased amount of contamination and therefore the minimum amount of sample may need to be greater than 3 mgs. It is always advised to consult with the Laboratory for minimum sample amounts but 17 milligrams of any type of parchment should always be sufficient. More material is preferred because the Laboratories like to keep surplus material for an archive. This archive serves as a permanent record of received samples in case any further questions arise concerning the material.

¹ This test result is known as AA-10926: AA denotes the University of Arizona Accelerator Laboratory and the number indicates that this is the 10,926th test performed by this facility.