

Public Guide : Service on date determination using carbon-14 analysis method
Service Organization : Thailand Institute of Nuclear Technology (Public Organization), Ministry of Science and Technology

Procedures, Rules, Conditions (if any) in the application and consideration

Thailand Institute of Nuclear Technology (Public Organization) or TINT provides radiocarbon dating service for carbon content materials that include peats, woods, clothes, shells, bones and some other flora and fauna remains. The technique is suitable for date determination of samples that were alive 200-30,000 years ago. Since it is a destructive method (sample is non-returnable) and sample is always invaluable, the quantity of sample is quite limit in many cases. However, the required sample size can be varied from 10-500 grams depending on particular samples. In general, the radiocarbon dating technique uses fundamental concept that when living organisms are alive, they exchange carbon-dioxide gas with surroundings. Consequently, the carbon-14 concentration in those living organisms maintain stable and identical to carbon-14 concentration in their surroundings through their life time. Until they died, the carbon cycle stopped and the concentration of carbon-14 systematically decreases by its half-life; which is 5,730 years. In other words, the concentration of carbon-14 in sample spontaneously decreases by one-half in every 5,730 years. If the concentration of carbon-14 in sample can be measured, the period of time after dead will be revealed. There are couples of methods to extract carbon-14 from sample, at TINT the carbon-14 will be either transformed to carbon dioxide or benzene. Afterwards, carbon-14 concentration in sample will be input in radioactive decay equation and compare with carbon-14 in standard reference materials such as oxalic acid and ANU sucrose delivered from plants that were living before 1950. The accuracy of results, nevertheless, depends on different parameters which the elimination of modern carbon-14 contamination in sample plays a key role. As a result, an appropriate sampling method, sample storage and treatment are significant in enhancing the accuracy as well as the reliability of data.

Service channel

<p>Service Station (Note : -)</p> <p><i>One Stop Service 9th building, 1st floor Thailand Institute of Nuclear Technology (Public Organization) 16 Lad Yao District Chatuchak, Bangkok 10900 /Self-contact at the office.</i></p>	<p>Opening hours <i>Open from Monday to Friday (except public holidays) from 08:30 AM to 4:30 PM</i></p>
<p>Service Station (Note : -)</p> <p><i>Sample Room, Building 1, 2nd Floor, National Institute of Nuclear Technology, Head Office 9/9, Sandalong, Ongkarak, Nakorn Nayok / Contact by yourself at the office.</i></p>	<p>Opening hours <i>Open from Monday to Friday (except public holidays) from 08:30 AM to 4:30 PM</i></p>

Procedure, Duration and Responsible division

Approximately time frame for completing the process is 30 working days.

No.	Procedure	Duration	Responsible division
1)	Document Inspection Check the accuracy and completeness of the request form and the quantity of goods to be analyzed. (note: -)	1 days	Thailand National Institute of Nuclear Technology (Public Organization)
2)	Consideration Confirm appointment date for obtaining the report (note: -)	30 minutes	Thailand National Institute of Nuclear Technology (Public Organization)
3)	Consideration Sample analysis and report preparation. (note: -)	25 days	Thailand National Institute of Nuclear Technology (Public Organization)
4)	Signing / Board of Directors Report approval (note: -)	4 days	Thailand National Institute of Nuclear Technology (Public Organization)

List of supporting documents

No.	Documents	Responsible division
1)	FM-RDD-10 1 copy 0 copies (Note : -)	Thailand National Institute of Nuclear Technology (Public Organization)

Fee

No.	Fee details	Fee (Baht)
1)	Service on date determination using carbon-14 analysis method (Note : Per sample)	7,490

Service Complaint Channel

No.	Complaints / Suggestions
1)	Thailand Institute of Nuclear Technology (Public Organization) Call Center 02-401-9885 <i>(Note :)</i>
2)	Public Service Center, Office of the Permanent Secretary, Office of the Prime Minister <i>(Notes: (1, Phitsanulok, Dusit, Bangkok, 10300/1111; Hotline / www.1111.go.th/ PO Box 1111, 1 Phitsanulok Road, Dusit, Bangkok, 10300))</i>

Sample Forms and Manuals to Complete

No.	Form Name
	<i>FM-RDD-10</i>

Remark :

For more information, please contact our Customer Service Representative. Nuclear Technology Service Center Thailand Institute of Nuclear Technology (Public Organization) Ongkarak, Nakhon Nayok 26120
Phone: 037-392-907, 61818, 02-401-9889 ext 1141 Fax: 037-392-912

Or One Stop Service at Thailand Institute of Nuclear Technology (Public Organization)
16 Vibhavadi-Rangsit Rd., Ladyao, Chatuchak, Bangkok 10900
Phone 02-401-9889 ext. 5990, 02-579-0743 fax 02-579-0220
Thailand Institute of Nuclear Technology (Public Organization) Call Center 02-401-9885

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