

Thoriated Tungsten Radioactivity Information

Thorium is a radioactive alloy used in tungsten welding electrodes to assist in arc starting. Although companies involved in welding have been using thoriated electrodes for many years, the industry is becoming more mindful of their potential health hazards. The following are notes, warnings, and recommendations from various organizations on the use of thoriated tungsten welding electrodes.



American Welding Society: "Thorium is radioactive and may present hazards by external and internal exposure. If alternatives are technically feasible, they should be used." "...if welding is to be performed in confined spaces for prolonged periods of time or if electrode grinding dust might be ingested, special precautions relative to ventilation should be considered. The user should consult appropriate safety personnel."



Standard Manufacturer's Warning: "Thorium dioxide is a naturally occurring radioactive element. It is an alpha emitter and, as such, its primary hazard lies in inhalation of dust/fumes." "Thorium dioxide has been identified as a carcinogen by the NTP and IARC." (These quotes are from Osram Sylvania MSDS sheets).



The Welding Institute: Thorium is a radioactive element. The HSE has recommended to factory inspectors that, where thoriated tungsten electrodes are not necessary, users should be encouraged to look for alternatives.



Cancer Assessment: Thorium dioxide has been identified as a carcinogen by the National Toxicology Program and International Agency for Research on Cancer.



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