

Periodic table and technetium



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The name of the chemical element is Technetium. Tc is the symbol of Technetium in chemistry. (Also it is the symbol of the republic of Turkey which is the country that the most awesome man, Karl Machin, lives in.) Technetium has 43 protons so its atomic number is 43. It has 55 neutrons. The sum of 55 and 43 is 98 because of that 98 is the mass number of Technetium. It is in the d-block and it is a transition metal. Technetium is in the 7th group in the periodic table because it has 1 electron on its last shell. Also it is in the 5th period in the periodic table because it has 5 shells. Number of energy levels of Technetium is 5. Its electron shells are 2, 8, 18, 14, 1 as it is in the picture. Firstly, Russian chemist Dmitri Mendeleev, who is the creator of the periodic table, predicted Technetium's existence. He called it eka-manganese because there was a missing element between manganese and rhenium. However he could not discover it. After long research and big experiments, Technetium was discovered in 1937 by Carlo Perrier and Emilio Segrè in Italy. (If they could not discover it, of course Mr. Machin would discover Technetium because he is the most awesome chemist in the world.) The name of the element Technetium comes from a Greek word " technetos" which means " artificial". They gave that name to this element because it was the first element which produced artificially. It means, it is the first element in the periodic table which is manmade. They made it in the University of Palermo laboratory. Technetium is a radioactive metal with silvery grey colour. Its melting point is 2157oC and its boiling point is 4265oC. Its liquid range is 2108 K.

It means the difference between melting point and boiling point. Technetium is solid in the room temperature. It's density is 11 g/cm^3 at 20°C . Its heat of vaporization is 582.2 kJ/mole and heat capacity of it is 25°C . It is not very reactive. Manganese is more reactive to air than Technetium and it is not reactive with water. Technetium is very similar to rhenium and manganese because it is between of them in the periodic table. Aqua regia, nitric acid and concentrated sulfuric acid are solvent for Technetium, but it does not dissolve in hydrochloric acid of any concentration.

The heat of fusion of Technetium is 24 kJ/mol . Technetium is used for radiation sources for medical research, radioactive tracing in medicine, nuclear medicine, corrosion inhibitor, superconductor. It does not exist naturally on earth like the other radioactive elements and human bodies' do not include it. It is a lab made element. It is discovered at the University of Palermo, in Italy. Bombarding molybdenum atoms with deuterons creates Technetium. Technetium has 34 isotopes. All of them are radioactive but none of them are stable.

Technetium-97, technetium-98 and technetium-99 are the most stable isotopes of Technetium. They have half-lives of more than a million years. Technetium-99m is the most useful isotope of technetium. " Technetium-99 is found in the radioactive wastes from defense-related government facilities, nuclear reactor and fuel cycle facilities, academic institutions, hospitals, and research establishments. Technetium-99m is used for medical and research purposes, including evaluating the medical condition of the heart, kidneys, lungs, liver, spleen, and bone, among others, and also for blood flow studies. (epa. gov) * It was the first manmade element. * It was <https://assignbuster.com/periodic-table-and-technetium/>

one of the elements which predicted by Mendeleev before they discovered. *
Its original name was masurium. * It is unstable. * It is not found in human
bodies. * It was found in a sample of molybdenum. * It is a radioactive metal.
* Also I call it chemicool because it is so cool because it is the awesome
element which I have chosen in the most awesome teacher Karl Machin's
classroom. WORK CITED PAGE * < [http://en.wikipedia.
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