

MEITNERIUM

Atomic Number **109**

Chemical Symbol **Mt**

Group **VIII B**—
A Transactinide

IA										IIA												VIII A
H												He										
Li	Be											B	C	N	O	F	Ne					
Na	Mg	III B	IV B	V B	VIB	VII B	VIII B			IB	II B	Al	Si	P	S	Cl	Ar					
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr					
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe					
Cs	Ba	*La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn					
Fr	Ra	†Ac	Rf	Db	Sg	Bh	Hs	Mt	Uun	Uuu	Uub	Uuq										
* Ce Pr Nd Pm Sm Eu Gd Tb Dy Ho Er Tm Yb Lu																						
† Th Pa U Np Pu Am Cm Bk Cf Es Fm Md No Lr																						



In 1982, the team of physicists that had discovered transactinide elements 107 and 108, led by Peter Armbruster and Gottfried Munzenberg, working in Darmstadt, Germany, announced the synthesis and discovery of element 109, unnilennium. In the research that led to the discovery of this new element, they bombarded a bismuth-209 target with high-energy iron-58 ions to create unnilennium-266. Incredible as it might seem, only three atoms of unnilennium were created, and they decayed after only 3.4 thousandths of a second. This was a very brief existence but long enough to identify their structure.

The German team confirmed the existence of unnilennium by following the series of decay products to which it gave rise. For the new element, they proposed the name *meitnerium*, in honor of Lise Meitner, the German physicist who, along with her nephew, Otto R. Frisch, had first envisioned nuclear fission as a splitting of the uranium nucleus.

In 1992, the International Union of Pure and Applied Chemistry confirmed the German team's research claims and both the IUPAC and the American Chemical Society approved the proposed name. Its chemical and physical properties remain unknown.

