

CHEMICAL REACTIONS OF MOLYBDENUM

<u>Substance</u>	<u>Temperature</u>	<u>Reaction</u>
Air or oxygen	20 °C 300 °C 600 °C	Stable Weak oxidation starts Rapid oxidation to MoO ₃
Hydrogen	All temperatures	Stable
Nitrogen	>1500 °C	Nitriding starts
Water	20 °C >700 °C	Stable Rapid oxidation
Steam	>700 °C	Rapid oxidation
CO	to 1400 °C >1400 °C	Stable Carburization
CO ₂	>1200 °C	Oxidation
Fluorine	20 °C	Fluoride forms
Chlorine	>300 °C	Chloride forms
Bromine	Red heat	Bromide forms
Iodine	to 500 °C	Stable
H ₂ S	1200 °C	Sulphide forms
Sulfur	to 440 °C	Attacked slowly
Phosphorus	Red heat	No action
Carbon	1100 °C	Carburization
Hydrocarbons	>900 °C	Carburization
Silicon	>1000 °C	Silicide forms
Mercury	All temperatures	No amalgamation
NaOH, / KOH, 10% solution	20 °C	Stable
NaOH, KOH	Molten	Rapid attack
Na- / K- nitrite or nitrate, aqueous	Room temp	Very slight reaction
Na- / K- nitrite or nitrate	Molten	Dissolves aggressively
H ₂ SO ₄ , dilute	100 °C	Stable
H ₂ SO ₄ , conc.	200 °C	Rapid attack
HCl, dil	Hot	Rapid attack
HNO ₃ , dil	20 °C	Rapid attack
HNO ₃ , conc.	100 °C	Slight attack
Aqua Regia	Warm	Rapid attack
HF, dil & conc	20 °C	Stable
HF + HNO ₃	Hot	Rapid attack