

# The reaction of graphite with different materials

Media	Temperature (°C)	Reaction Product
Air	450	Oxidation
Steam	700	Oxidation
Hydrogen	1100	CH <sub>4</sub> gas
Vacuum	2200	Vaporisation
Nitrogen	2500	C <sub>2</sub> N <sub>2</sub>
Al <sub>2</sub> O <sub>3</sub>	1300	Al <sub>4</sub> C <sub>3</sub>
B	1600	B <sub>4</sub> C
Fe	600-800	Fe <sub>3</sub> C
W	1400	W <sub>2</sub> C, WC

Graphite is resistance to most acids and alkali except for strong oxidising media such as concentrated Nitric Acid, chromic acid, etc. Media that create lamellar compounds, such as concentrated sulphuric acid, strong alkali compounds and bromine will attack graphite.

Graphite is chemically stable under normal conditions but will react with certain compounds at certain temperatures. Examples are given in the table shown left.

Graphite does not normally adhere to glass or metals.

