The reactions of pure metals Ta, Nb, V, Fe, Si, etc. and Ta-Nb-containing ferroalloys with sodium (calcium) sulfate (carbonate) melts are characterized by large exothermic effects and formation of solid, liquid and gaseous products. The liquid phases formed reduce diffusion restrictions and result in catastrophically large rates of metal oxidation.

Key words: Oxidation; Component; Sulfate; Melt.