

Reactor Loop's Parameters:

	Mass Flow	Hot	Hot	Cold	Cold	Fluid
	kg/s	C	bar	C	Bar	numbers are mol fraction
Fuelsalt	2994	704	10.5	564	4.0	NaF-BeF ₂ -ThF ₄ -UF ₄ 76/12/9.5/2.5
Secondary Salt	1534	621	10.5	454	20.0	NaF-BeF ₂ 57/43
Tertiary Salt	1414	598	12.0	344	1.0	NaNO ₃ -KNO ₃ 55/45
Steam Main	225	538	248	288	260	
Steam Reheat	162	538	38	343	39	

The reactor will be coupled to the hydrogen production process by implementing two heat exchangers in the tertiary loop. One of the heat exchanger is the reactors heat transfer to the steam generator and the second heat exchanger will be the indirect connection from the reactor to the hydrogen process. The tertiary salt will transfer heat to a water loop in the hydrogen process. This water loop will carry the necessary heat for the whole hydrogen plant this way eliminating cost and increasing safety.

Figure 1: Overview

Figure 2: Reactor Flow Diagram

Figure 3: Cu-Cl Hydrogen Production Flow Diagram