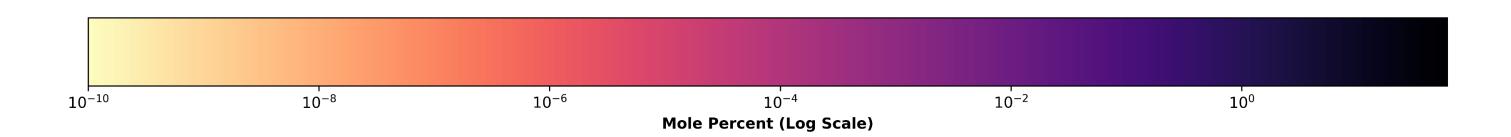
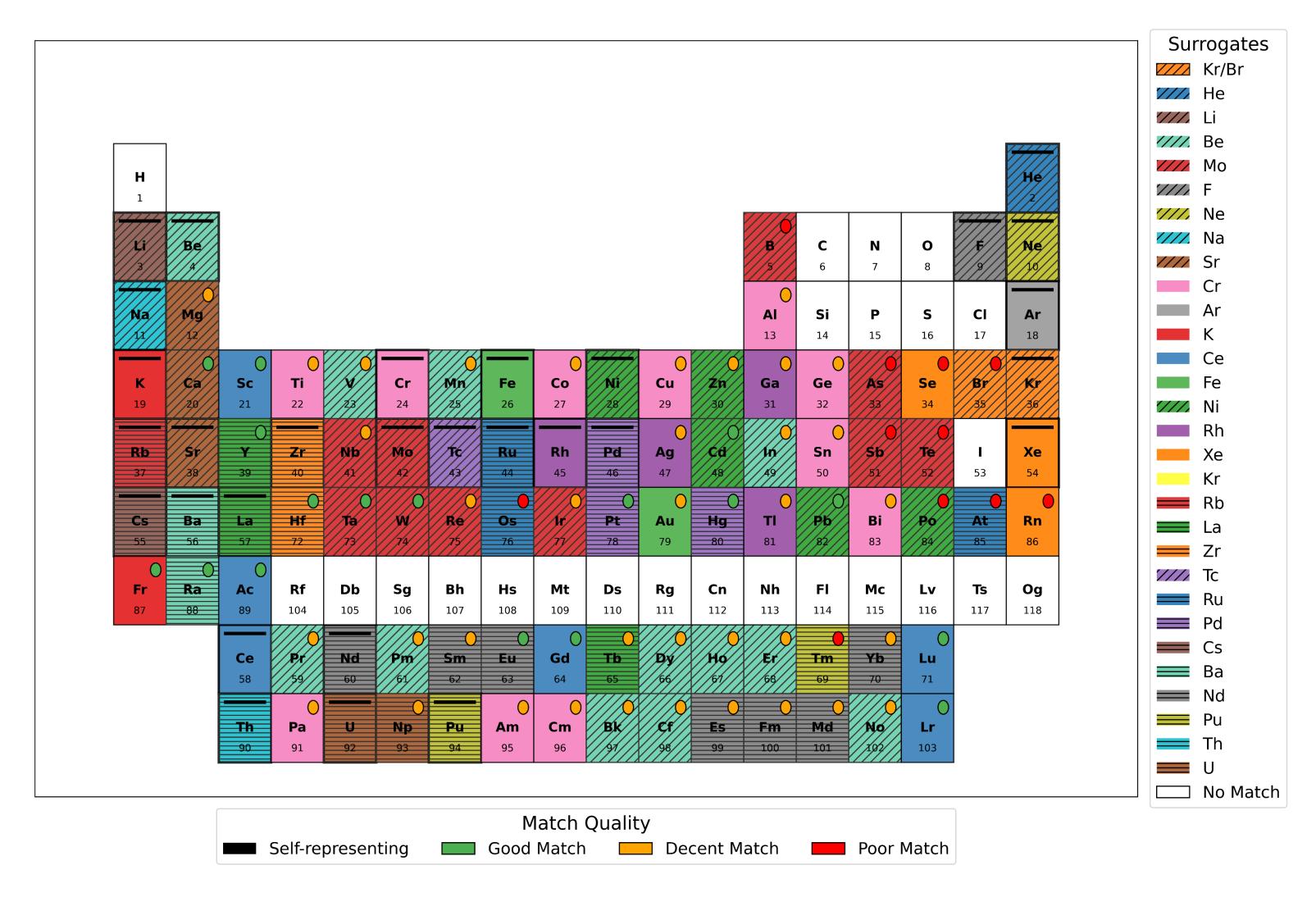
## The IRENE Fuel Cycle Elemental Abundance

							Eleme	ental Mo	ole Perc	ent at T	ime Ste	ep 300					
<b>H</b>																	0.02% He
24.5%											<b>B</b> 5	<b>C</b>	<b>N</b> 7	<b>O</b> 8	60.4% F	<b>Ne</b>	
<b>Na</b>	<b>Mg</b>								I	I		<b>Al</b> 13	<b>Si</b>	<b>P</b> 15	<b>S</b>	<b>CI</b>	<b>Ar</b> 18
<b>K</b> 19	<b>Ca</b> 20	<b>Sc</b> 21	<b>Ti</b> 22	<b>V</b> 23	<b>Cr</b> 24	<b>Mn</b> 25	<b>Fe</b>	<b>Co</b> 27	<b>Ni</b> 28	<b>Cu</b> 29	<b>Zn</b> 30	<b>Ga</b>	<b>Ge</b> 32	<b>As</b> 33	<b>Se</b> 34	<b>Br</b> 35	<b>Kr</b> 36
<b>Rb</b> 37	<b>Sr</b> 38	<b>Y</b> 39	0.05% Zr 40	<b>Nb</b> 41	<b>Mo</b> 42	<b>Tc</b> 43	<b>Ru</b> 44	<b>Rh</b> 45	<b>Pd</b> 46	<b>Ag</b> 47	<b>Cd</b> 48	<b>In</b> 49	<b>Sn</b> 50	<b>Sb</b> 51	<b>Te</b>	<b>I</b> 53	<b>Xe</b> 54
<b>Cs</b> 55	<b>Ba</b> 56	<b>La</b> 57	<b>Hf</b> 72	<b>Ta</b>	<b>W</b> 74	<b>Re</b> 75	<b>Os</b> 76	<b>Ir</b> 77	<b>Pt</b> 78	<b>Au</b> 79	<b>Hg</b>	<b>TI</b> 81	<b>Pb</b> 82	<b>Bi</b> 83	<b>Po</b> 84	<b>At</b> 85	<b>Rn</b> 86
<b>Fr</b> 87	<b>Ra</b> 88	<b>Ac</b> 89	<b>Rf</b> 104	<b>Db</b>	<b>Sg</b>	<b>Bh</b> 107	<b>Hs</b>	<b>Mt</b> 109	<b>Ds</b> 110	<b>Rg</b>	<b>Cn</b>	<b>Nh</b> 113	<b>FI</b>	<b>Mc</b>	<b>Lv</b> 116	<b>Ts</b>	<b>Og</b>
		0.02% Ce <sup>58</sup>	<b>0.01%</b> Pr 59	0.03% Nd 60	<b>Pm</b> 61	<b>Sm</b> 62	<b>Eu</b> 63	<b>Gd</b> 64	<b>Tb</b> 65	<b>Dy</b>	<b>Ho</b> 67	<b>Er</b> 68	<b>Tm</b> 69	<b>Yb</b> 70	<b>Lu</b> 71		
		1.79% Th	<b>Pa</b>	0.84% U	<b>Np</b> 93	0.02% Pu 94	<b>Am</b> 95	<b>Cm</b>	<b>Bk</b> 97	<b>Cf</b> 98	<b>Es</b> 99	<b>Fm</b>	<b>Md</b>	<b>No</b>	<b>Lr</b>		



The ThEIRENE Fuel Cycle uses prescribed removal rates for some noble metals and gases. Shown here is the salt nuclide composition after 300 days. These data are used throughout.

## Surrogate Map - Gen I

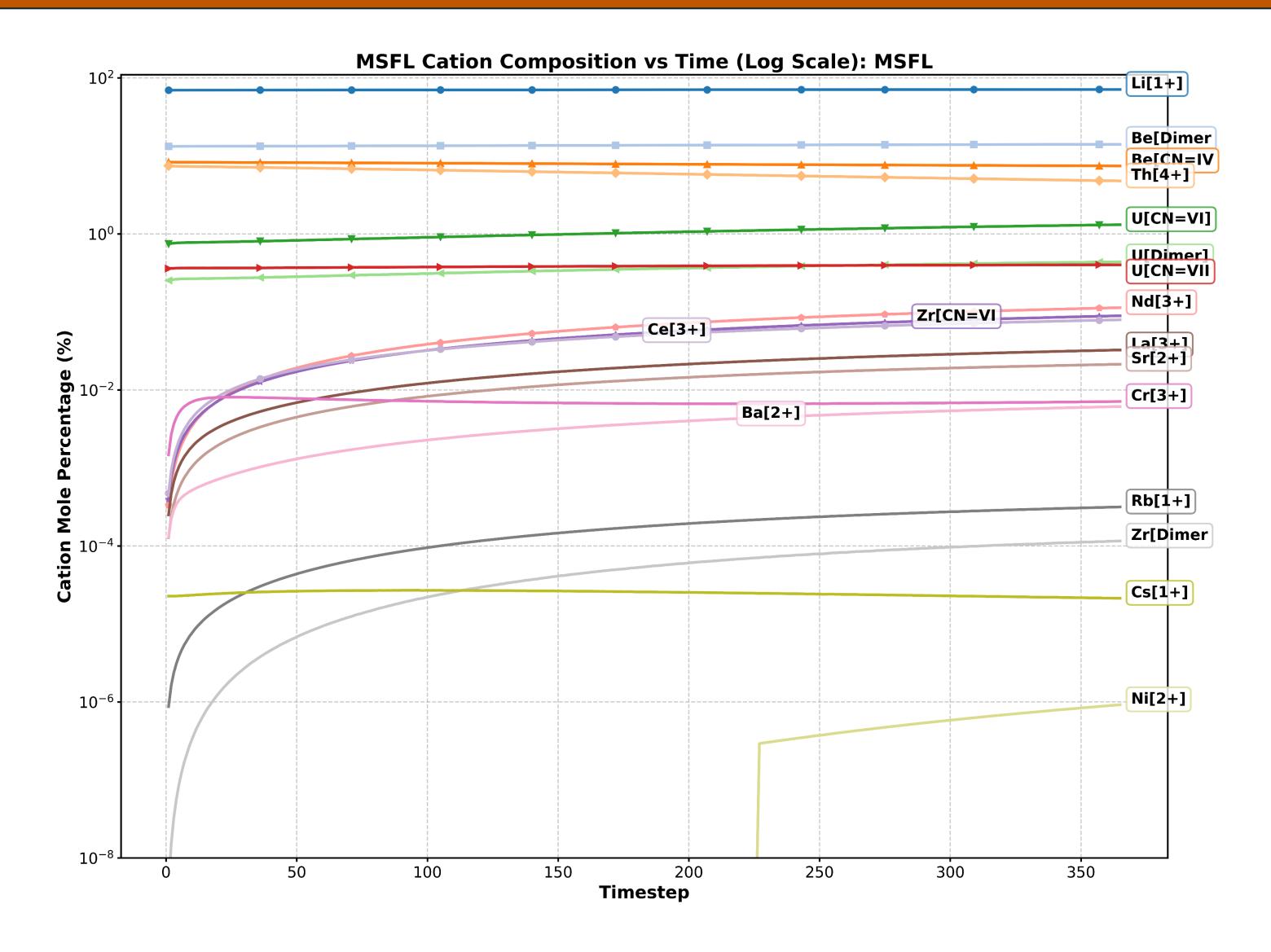


Good Match – Same half-reactions with similar potentials

Decent Match – Similar half-reactions

Poor – Based on electronegativity and elemental melting point

## Theire Fuel Cycle Salt Species



Evolution of molten salt ionic composition for the ThEIRENE fuel cycle. Note the consumption of Th.

## Want to See More?



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