

Report il - Energetically Feasible Aneutronic X + n D* --> Y + Z Reactions, n = 1 to 12
 Where X = Ba56, Y=Sm62, (Potential reactions for Iwamura's Ba --> Sm transmutation)

----- Equations follow for Barium, Ba, element 56 -----

132Ba56 + 6 D* --> 144Sm62 + 72.351 MeV [-8.090 MeV]	(il_Ba:1)
132Ba56 + 7 D* --> 144Sm62 + 2H1 + 72.351 MeV [-22.598 MeV]	(il_Ba:2)
132Ba56 + 8 D* --> 144Sm62 + 4He2 + 96.198 MeV [-13.567 MeV]	(il_Ba:3)
132Ba56 + 9 D* --> 144Sm62 + 6Li3 + 97.672 MeV [-27.213 MeV]	(il_Ba:4)
132Ba56 + 11 D* --> 144Sm62 + 10B5 + 125.979 MeV [-30.053 MeV]	(il_Ba:5)
132Ba56 + 12 D* --> 144Sm62 + 12C6 + 151.166 MeV [-20.889 MeV]	(il_Ba:6)
134Ba56 + 7 D* --> 147Sm62 + 1H1 + 74.983 MeV [-19.536 MeV]	(il_Ba:7)
134Ba56 + 8 D* --> 147Sm62 + 3He2 + 80.477 MeV [-28.798 MeV]	(il_Ba:8)
135Ba56 + 6 D* --> 147Sm62 + 70.236 MeV [-9.654 MeV]	(il_Ba:9)
135Ba56 + 7 D* --> 147Sm62 + 2H1 + 70.236 MeV [-24.072 MeV]	(il_Ba:10)
135Ba56 + 7 D* --> 148Sm62 + 1H1 + 76.153 MeV [-18.155 MeV]	(il_Ba:11)
135Ba56 + 8 D* --> 147Sm62 + 4He2 + 94.082 MeV [-14.950 MeV]	(il_Ba:12)
135Ba56 + 8 D* --> 148Sm62 + 3He2 + 81.646 MeV [-27.387 MeV]	(il_Ba:13)
135Ba56 + 9 D* --> 147Sm62 + 6Li3 + 95.556 MeV [-28.507 MeV]	(il_Ba:14)
135Ba56 + 11 D* --> 147Sm62 + 10B5 + 123.864 MeV [-31.169 MeV]	(il_Ba:15)
135Ba56 + 12 D* --> 147Sm62 + 12C6 + 149.050 MeV [-21.916 MeV]	(il_Ba:16)
136Ba56 + 6 D* --> 148Sm62 + 69.270 MeV [-10.440 MeV]	(il_Ba:17)
136Ba56 + 7 D* --> 148Sm62 + 2H1 + 69.270 MeV [-24.828 MeV]	(il_Ba:18)
136Ba56 + 7 D* --> 149Sm62 + 1H1 + 72.916 MeV [-21.182 MeV]	(il_Ba:19)
136Ba56 + 8 D* --> 148Sm62 + 4He2 + 93.116 MeV [-15.677 MeV]	(il_Ba:20)
136Ba56 + 8 D* --> 149Sm62 + 3He2 + 78.410 MeV [-30.384 MeV]	(il_Ba:21)
136Ba56 + 9 D* --> 147Sm62 + 7Li3 + 93.698 MeV [-30.096 MeV]	(il_Ba:22)
136Ba56 + 9 D* --> 148Sm62 + 6Li3 + 94.590 MeV [-29.205 MeV]	(il_Ba:23)
136Ba56 + 10 D* --> 147Sm62 + 9Be4 + 110.395 MeV [-28.704 MeV]	(il_Ba:24)
136Ba56 + 11 D* --> 147Sm62 + 11B5 + 126.210 MeV [-28.495 MeV]	(il_Ba:25)
136Ba56 + 11 D* --> 148Sm62 + 10B5 + 122.897 MeV [-31.807 MeV]	(il_Ba:26)
136Ba56 + 12 D* --> 147Sm62 + 13C6 + 144.889 MeV [-25.720 MeV]	(il_Ba:27)
136Ba56 + 12 D* --> 148Sm62 + 12C6 + 148.084 MeV [-22.525 MeV]	(il_Ba:28)
137Ba56 + 6 D* --> 149Sm62 + 68.235 MeV [-11.296 MeV]	(il_Ba:29)
137Ba56 + 7 D* --> 149Sm62 + 2H1 + 68.235 MeV [-25.654 MeV]	(il_Ba:30)
137Ba56 + 7 D* --> 150Sm62 + 1H1 + 73.997 MeV [-19.892 MeV]	(il_Ba:31)
137Ba56 + 8 D* --> 149Sm62 + 4He2 + 92.082 MeV [-16.474 MeV]	(il_Ba:32)
137Ba56 + 8 D* --> 150Sm62 + 3He2 + 79.491 MeV [-29.065 MeV]	(il_Ba:33)
137Ba56 + 9 D* --> 148Sm62 + 7Li3 + 94.934 MeV [-28.593 MeV]	(il_Ba:34)
137Ba56 + 9 D* --> 149Sm62 + 6Li3 + 93.555 MeV [-29.972 MeV]	(il_Ba:35)
137Ba56 + 10 D* --> 148Sm62 + 9Be4 + 111.631 MeV [-27.173 MeV]	(il_Ba:36)
137Ba56 + 11 D* --> 148Sm62 + 11B5 + 127.446 MeV [-26.934 MeV]	(il_Ba:37)
137Ba56 + 11 D* --> 149Sm62 + 10B5 + 121.863 MeV [-32.517 MeV]	(il_Ba:38)
137Ba56 + 12 D* --> 148Sm62 + 13C6 + 146.125 MeV [-24.130 MeV]	(il_Ba:39)
137Ba56 + 12 D* --> 149Sm62 + 12C6 + 147.049 MeV [-23.206 MeV]	(il_Ba:40)
138Ba56 + 6 D* --> 150Sm62 + 67.610 MeV [-11.744 MeV]	(il_Ba:41)
138Ba56 + 7 D* --> 150Sm62 + 2H1 + 67.610 MeV [-26.073 MeV]	(il_Ba:42)
138Ba56 + 8 D* --> 150Sm62 + 4He2 + 91.457 MeV [-16.864 MeV]	(il_Ba:43)
138Ba56 + 9 D* --> 149Sm62 + 7Li3 + 92.194 MeV [-31.070 MeV]	(il_Ba:44)
138Ba56 + 9 D* --> 150Sm62 + 6Li3 + 92.930 MeV [-30.333 MeV]	(il_Ba:45)
138Ba56 + 10 D* --> 149Sm62 + 9Be4 + 108.890 MeV [-29.620 MeV]	(il_Ba:46)
138Ba56 + 11 D* --> 149Sm62 + 11B5 + 124.705 MeV [-29.352 MeV]	(il_Ba:47)
138Ba56 + 11 D* --> 150Sm62 + 10B5 + 121.238 MeV [-32.819 MeV]	(il_Ba:48)
138Ba56 + 12 D* --> 149Sm62 + 13C6 + 143.384 MeV [-26.520 MeV]	(il_Ba:49)
138Ba56 + 12 D* --> 150Sm62 + 12C6 + 146.424 MeV [-23.480 MeV]	(il_Ba:50)

Report 11 - Energetically Feasible Aneutronic $X + n D^* \rightarrow Y + Z$ Reactions, $n = 1$ to 12
Where $X = Ba56$, $Y=Sm62$, (Potential reactions for Iwamura's Ba \rightarrow Sm transmutation)

Total number of reaction equations: 50

Maximum number of D fused with X: 12

Adjustment factor to compound nucleus radius: 1

Energy threshold for including reaction, in eV: 10

Note - D^* denotes a deflated state hydrogen nucleus, including the electron

Note - the energy in brackets is initial compound nucleus net energy,
i.e. the fusion energy less the deflated electron energy deficit