
```

% Universal Constants
R_u=8.314; %[R_u]=J/mol*K
k_b=11604.505; %[k_b]=K/eV

% Plasma Parameters
T_ev=100; %[T_ev]=eV

% Species masses
m_LiD=9.27; %[m_LiD]=g
m_Pu=395; %[m_Pu]=g
m_Fe=33; %[m_Fe]=g
m_T=sum([m_LiD m_Pu m_Fe]);

% Species molecular weights
MW_LiD=8.954; %[MW_LiD]=g/mol.
% Retrieved from https://pubchem.ncbi.nlm.nih.gov/compound/
Lithium_deuteride#section=Top
MW_Pu=244.064; %[MW_Pu]=g/mol.
% Retrieved from https://pubchem.ncbi.nlm.nih.gov/
compound/23940#section=Top
MW_Fe=55.845; %[MW_Fe]=g/mol
% Retrieved from https://pubchem.ncbi.nlm.nih.gov/
compound/23925#section=Top
MW_He=4.002602; %[MW_He]=g/mol.

% Mol of species derivation
mol_LiD=m_LiD/MW_LiD;
mol_Pu=m_Pu/MW_Pu;
mol_Fe=m_Fe/MW_Fe;

% Convert 1mol LiD to 2mol He
%mol_He=2*mol_LiD;
tot_mol=sum([mol_LiD, mol_Pu, mol_Fe]);

% Species mol fraction
x_LiD=mol_LiD/tot_mol;
%x_He=mol_He/tot_mol;
x_Pu=mol_Pu/tot_mol;
x_Fe=mol_Fe/tot_mol;

% Molecular weight of species mixture
MW_mix=sum([x_LiD x_Pu x_Fe].*[MW_LiD MW_Pu MW_Fe]);

R=R_u/MW_mix;
E_therm=(3*m_T*R*(k_b*T_ev))
% R=E_therm/(m_T*(k_b*T_ev))
% MW_mix=R_u/R

E_therm =

    9.3913e+07

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