

July 13, 2010 12:09pm BST

**I want to know how to use built-in material property in PDE module**

Hello, everyone  
  
it's simple question  
  
I simulate some model with PDE  
  
but, i cannot get information from Material tab  
  
For example, Materials -> Argon{mat1} -> Density(rho), Expression : rho(T)  
  
How to use that value in the PDE?   
  
Below is error code  
  
Failed to evaluate expression.  
- Expression: mat1.rho  
Failed to evaluate variable.  
- Variable: mat1.rho  
- Global scope  
  
I tried mat1.rho, mat.rho, mod1.mat1.rho .... etc at the expression box in the PDE  
  
but anything works  
  
Thank you  
  
Lee

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Ivar KJELBERG

**Ivar KJELBERG   
Moderator**

July 13, 2010 5:24pm BST in response to [Dong seok Lee](http://www.comsol.com/community/forums/general/thread/7301/#p19289)

**Re: I want to know how to use built-in material property in PDE module**

Hi  
  
There are a few caveat with library materials. One is that they are often derived with internal variables such as temperature T and pressure p, and often you do not use these variables by default in your model.  
  
Then you MUST define a Constant T=20[degC] or whatever fits you, and p=1[atm]. I believe you do not have any T defined, or did I miss the point ? (that error is at least a common one).  
  
Next, is that when you define a material from the library, COMSOL 3.5a defines variables "mat1.something" "mat2.something" etc. and set the different (sub)domains material properties equal to the relevant "mat1.something" etc.  
  
So either you use the domain definition through COMSOL or you access the "mat1.something" directly (but this is depending on the order you used to call them into the model.  
  
in anycase you have a rho(T) required so T must be defined, if not through the application mode, than as a Constant  
  
Good luck  
Ivar