

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
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