

The physical properties for an incompressible fluid without multi-species components

We report here the dimensionless data set about the fluid properties defined above.

```
&Fluid_Properties Variable_Density          = .false. , !----
Incompressible fluid
                    Constant_Mass_Flow       = .true. , !---- The mass
flowrate is constant
                    Heat_Transfer_Flow       = .true. , !---- Heat
transfer enabled
                    Reference_Density        = 1.0    , !----
Dimensionless fluid density
                    Reference_Dynamic_Viscosity = 1.D-02 , !----
Dimensionless dynamic viscosity (=1/Reh)
                    Reference_Temperature    = 1.0    , !----
Dimensionless reference temperature (=Tc*)
                    Prandtl                  = 0.71   , !---- Prandtl
number value
                    Thermal_Expansion_Coefficient= 1.0   /  !----
Dimensionless thermal expansion coefficient
```



The heat capacity of the fluid is not set here because useless. For incompressible flows without multi-species components, the enthalpy equation is reduced to an advective-diffusive transport equation for temperature. Only the thermal must be defined which is directly computed from the "Reference_Dynamic_Viscosity", the "Reference_Density" and the "Prandtl" values.

For more examples about the fluid properties setting [click here](#).

From:

<https://sunfluidh.lisn.upsaclay.fr/> - Documentation du code de simulation numérique SUNFLUIDH

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