How to Get RGP file for Nitrogen.

Problem/Description:

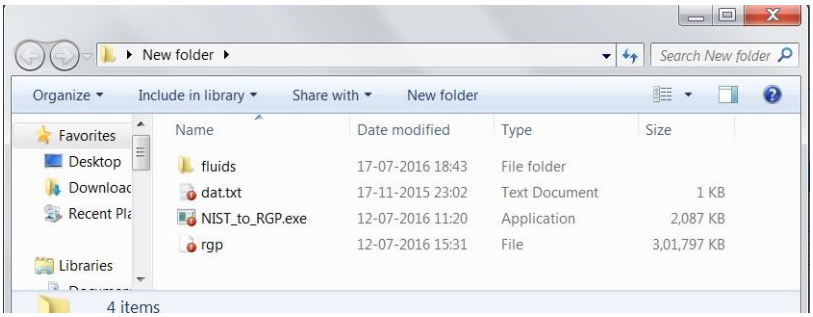
How to get RGB file for Nitrogen.

Solution:

Here I am giving details about converting NIST to RGP for Nitrogen. The procedure can be applied for other real gas materials too. Users need to have access to NIST database.

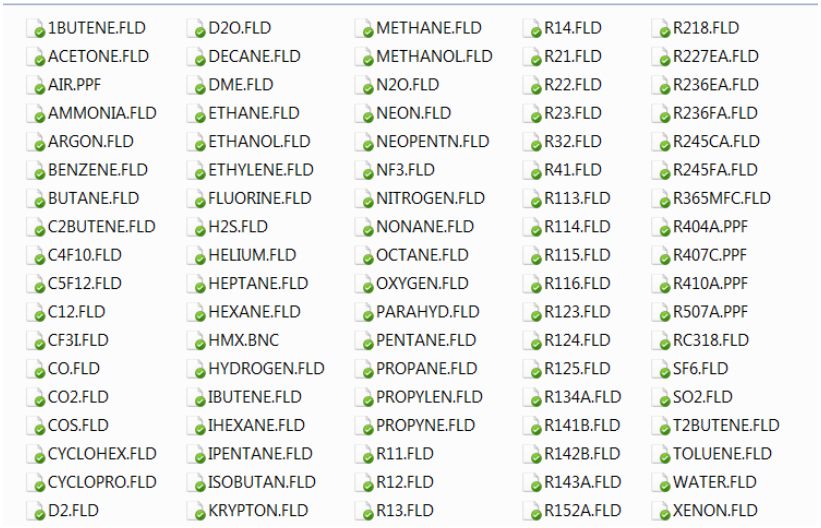
Please follow the procedure as mentioned below:

1) Unzip and copy the files “dat.txt” & “NIST_to_RGP.exe” in same folder.

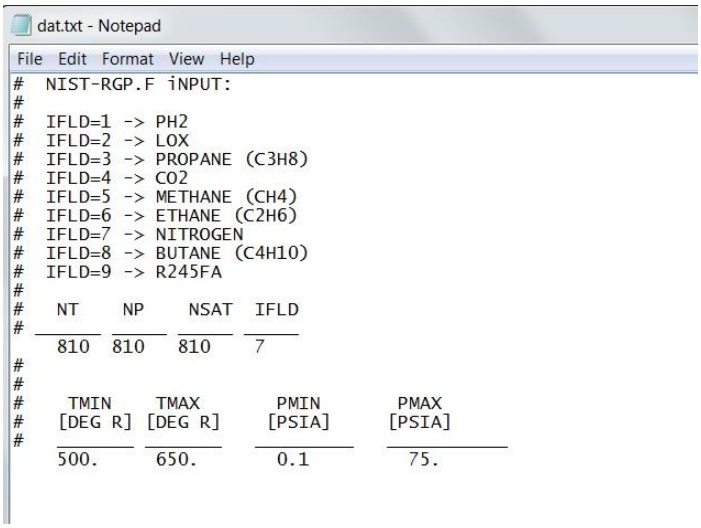


2) Create a folder called “fluids” in the same directory & copy all NIST REF PROP fluid database fluids (e.g. CO2, N2 etc.) This folder should essentially contain all the files generated from NIST database like *.fld etc. The code will be looking for this directory and input file (dat.txt) for the selected fluid.

The folder “fluids” contains the files as given below



3) Modify the field under IFLD in dat.txt file to generate RGP for N2. As you want an RGP file using N2.



4) NT, NP & NSAT are the data points. Basically there are number of subdivisions for temperature, pressure & saturated pressure respectively. User has to specify these based on their requirement.

5) The TMIN, TMAX, PMIN, PMAX should be based on the particular fluid property for which you are creating the RGP files.

6) After making the required changes to the dat.txt file, click on the exe file which will eventually create the RGP file. It will take a few minutes to generate the RGP file.

One can expand the range a bit due to overshoots that may occur in the solution process. You can alter these as per your requirements.

Attachments
NISTtoRGP.zip