

NAME

iapws - Compute light and heavy water properties.

SYNOPSIS

iapws *SUBCOMMAND* [*OPTION...*]

DESCRIPTION

iapws is a command line interface for computing properties of light and heavy water according to IAPWS.

SUBCOMMANDS

Valid subcommands are:

- +kh** Compute the Henry's constant for gases in H₂O or D₂O. The default behavior is to compute the constant kH for O₂ at 25°C. See options.
- +kd** Compute the vapor-liquid distribution constant for gases in H₂O or D₂. The default behavior is to compute the constant kD for H₂ at 25°C. See options.
- +psat** Compute the saturation pressure. The default behavior is to compute psat at 25°C. See options.
- +Tsat** Compute the saturation temperature. The default behavior is to compute Tsat at 1 bar. See options.

Their syntax is:

- +kh** [*OPTION...*]
- +kd** [*OPTION...*]
- +psat** [*OPTION...*]
- +Tsat** [*OPTION...*]

OPTIONS

kh:

- temperature, -T TEMPERATURE...**
Temperature in °C. Default to 25°C.
- fugacity, -f FUGACITY...**
Liquid-phase fugacity in MPa. Default to 0.1
- gases, -g GAS...**
Gases for which to compute kH. Default to O₂
- D2O** Set heavywater as the solvent.
- listgases**
Display available gases for computing kH.

kd:

- temperature, -T TEMPERATURE...**
Temperature in °C. Default to 25°C.
- x2, -x x2...**
Molar fraction of gas in water. Default to 1
- gases, -g GAS...**
Gases for which to compute kD. Default to H₂
- D2O,** Set heavywater as the solvent.
- listgases**
Display available gases for computing kD.

psat:

--temperature, -T TEMPERATURE...
Temperature in °C. Default to 25°C.

Tsat:

--pressure, -p PRESSURE...
Pressure in bar. Default to 1 bar.

all:

--usage, -u
Show usage text and exit.

--help, -h
Show help text and exit.

--verbose, -V
Display additional information when available.

--version, -v
Show version information and exit.

EXAMPLE

Minimal example

```
    iapws kh -T 25,100 -f 0.1,0.02 -g O2,H2
```

```
    iapws kd -T 25,100 -x2 1d-9,1d-6 -g O2,H2
```

SEE ALSO

ciaaw(3), codata(3)