

NAME

psat – compute the saturation pressure

LIBRARY

iapws library (*libiapws*, *-liapws*)

SYNOPSIS

```
Fortran      pure subroutine psat(Ts,ps)
              real(dp), intent(in), contiguous :: Ts(:)
              real(dp), intent(out), contiguous :: ps(:)

C            void iapws_r797_psat(size_t N, double *Ts, double *ps);

Python       psat(Ts:np.ndarray)->Union[np.ndarray,float]:
```

DESCRIPTION

Compute the saturation pressure *ps* at temperature *Ts*.

Arguments:

Ts(:) Saturation temperature in K.

ps(:) Saturation pressure in MPa.

Validity range: 273.13 K <= T <= 647.096 K

RETURN VALUE

ps is filled with NaN if out of validity range.

EXAMPLES

Fortran:

```
use iapws
real(dp) :: T(1), p(1)
T(1) = 25.0_dp + 273.15_dp
call psat(T, p)
```

C:

```
#include "iapws.h"
double T = 25.0 + 273.15;
double p;
iapws_g704_psat(1, &T, &p);
```

Python:

```
import numpy as np
import pyiapws
T = np.asarray([25.0])
p = pyiapws.psat(T+273.15)
print(p)
```

SEE ALSO

***iapws*(1) *iapws_lib*(3) *iapws_psat*(3) *iapws_Tsat*(3) *iapws_kh*(3) *iapws_kd*(3) *iapws_kw*(3)
iapws_Tc(3) *iapws_pc*(3) *ciaaw*(3), *codata*(3),**