

List of typical symbols

A_i	-component of reaction
A^{daf}	- ash amount (daf), %
c_p	- heat capacity, kJ/(kg·K)
E_a	- activation energy, kJ/kmol
E^*	- active complex activation energy, kJ/kmol
ΔE_{uk}	- system energy change, kJ
E_{prod}	- products energy, kJ
E_{subs}	- substrates energy, kJ
$\Delta_r G^0$	- standard Gibbs free enthalpy of reaction, kJ/kg
H_i	- standard enthalpy of components, kJ/kmol
$\Delta_b H^0$	- standard enthalpy of chemical bond, kJ/kmol
$\Delta_c H^0$	- standard enthalpy of combustion, kJ/kg
$\Delta_f H^0$	- standard enthalpy of formation, kJ/kg
$\Delta_r H^0$	- enthalpy of reaction, kJ/kg
$\Delta_{\text{vap}} H^0$	- enthalpy of vapourisation, kJ/kg
k	- reaction rate constatnt, 1/s
k_∞	- frequency factor, 1/s
K_a	- thermodynamic reaction constant
m_h	- heating rate, K/s lub K/min
M	- mole mass, kg/kmol
P	- pressure, Pa
$Q_s(\text{HHV})$	- heating value, kJ/kg
Q_s^{daf}	- heating value (daf), kJ/kg
R_g	- gas constant, kJ/(kmol·K)
R_0	- vitrinite reflectance factor, %
$\Delta_r S^0$	- standard entropy of reaction, kJ/(kg·K)
T	- temperature, K lub °C
T_o	- reference temperature, K
T_{ot}	- room temperature, K
$\Delta t, \Delta T$	- change of temperature, K
U	- internal energy, kJ
ΔU	- change of internal energy, kJ
V	- released volatiles, kg/kg węgla daf
V_0^{daf}	- initial amount of volatiles, %
V_p	- air stream, m³/s
W	- work, kJ
$W_d(\text{LHV})$	- lower heating value, kJ/m³
θ	- oxygen amount (O_d^{daf}), used in correction factor for enthalpy of formation % mas
μ	- mean value
v_i	- stoichiometric coefficient
τ	- time, s
d_p	- pipe diameter
ρ_g	- gas density
ρ_s	- solid density
u_g	- gas velocity
F_s	- solid flux
Φ_s	- sphericity

States of coal:

ar (r)	- as received
a	- analytical
d	- dry
daf	- dry & ash free