

Å	Angstrom
ARR	Arrhenius
A-type	polymorphic crystalline form of starch
Ap	amylopectin
Aw	water activity
"Aw"	"water activity" (i.e. relative vapor pressure, $p/p^{\circ}$ )
$a_T$	WLF shift factor as a function of temperature
$a_p$	WLF shift factor as a function of plasticizer content
BET	Brunauer-Epstein-Teller
B-type	polymorphic crystalline form of starch
C	concentration
$^{\circ}\text{C}$	degrees Centigrade
CMC	carboxymethyl cellulose
Ce	solute concentration at $T_e$
Cg	solute concentration in an aqueous glass at its $T_g$
Cg'	solute concentration in an aqueous glass at its $T_g'$
Cp	heat capacity
$\Delta C_p$	change in heat capacity
C1, C2	coefficients in the WLF equation
cal	calorie
cm	centimeter
cP	centipoise
cps	cycles per second
D	diluent concentration
DE	dextrose equivalent
Dg	diluent concentration in a glass at its $T_g$
Dg'	diluent concentration in a glass at its $T_g'$
DM	dry matter
DMA	dynamic mechanical analysis
DMSO	dimethyl sulfoxide
DNA	deoxyribonucleic acid
DP	degree of polymerization
$\overline{DP}_n$	number-average degree of polymerization
$\overline{DP}_w$	weight-average degree of polymerization
DSC	differential scanning calorimetry
DTA	differential thermal analysis
d.b.	dry basis
d.s.	dry solids

EPR	electron paramagnetic resonance
e.g.	for example
endo	endothermic
$^{\circ}\text{F}$	degrees Fahrenheit
FW	freezable water
f	activity coefficient
G	Gibbs free energy
$\Delta\text{G}$	change in Gibbs free energy
GAB	Guggenheim-Anderson-DeBoer
GHz	gigahertz
GR	growth rate
g	gram
H	enthalpy
$\Delta\text{H}$	enthalpy change
HFCS	high fructose corn syrup
h	hydration number
hr	hour
I	ionic strength
IMF	intermediate-moisture food
i.e.	that is
J	Joule
J'	storage compliance
K	equilibrium dissociation constant
$^{\circ}\text{K}$	degrees Kelvin
KHz	kilohertz
k	rate constant
kg	kilogram
kilobar	1000 atmospheres pressure
$\log_{10}$	logarithm, base 10
ln	natural logarithm
M	molar concentration
MPa	megaPascal
MW	molecular weight
MWD	molecular weight distribution
$\bar{M}_n$	number-average molecular weight
$\bar{M}_w$	weight-average molecular weight
$\bar{M}_n'$	number-average molecular weight of the solute-UFW glass at its $T_g'$
$\bar{M}_w'$	weight-average molecular weight of the solute-UFW glass at its $T_g'$
$\bar{M}_w/\bar{M}_n$	polydispersity index
m	molal concentration

mcal	millicalorie
min	minute
mm	millimeter
N	normal concentration
NMR	nuclear magnetic resonance
NR	nucleation rate
n	number
nm	nanometer
ns	nanosecond
P	pressure
$\Delta P$	plasticizer differential
Pa	Pascal
Pa s	Pascal second
PEG	poly(ethylene glycol)
PHC	polyhydroxy compound
PPG	poly(propylene glycol)
PVAc	poly(vinyl acetate)
PVC	poly(vinyl chloride)
PVP	poly(vinyl pyrrolidone)
p	vapor pressure
$p^{\circ}$	vapor pressure of pure liquid water
pH	-log of the hydronium ion concentration in aqueous solution
pK	-log of the equilibrium dissociation constant
$p/p^{\circ}$	relative vapor pressure
ps or psec	picosecond
$Q_{10}$	rate expression associated with Arrhenius kinetics
R	gas constant
R.H. or RH	relative humidity
%RH	percent relative humidity
RNase	ribonuclease
RT	room temperature
RVP	relative vapor pressure
r	linear correlation coefficient
S	solute
SHP	starch hydrolysis product
SSL	sodium stearyl lactylate
s or sec	second
T	temperature
TADS	thermal analysis data station
% TM	percent total moisture

TMA	thermomechanical analysis
$\Delta T$	temperature differential (e.g. $T - T_g$ )
$T_a$	annealing temperature
$T_{am}$	"antemelting" transition temperature
$T_c$	collapse transition temperature
$T_{cr}$	crystallization temperature
$T_d$	devitrification temperature
$T_e$	eutectic melting temperature
$T_{exp}$	experimental temperature
$T_f$	freezer temperature
$T_{fr}$	flow relaxation temperature
$T_g$	glass transition temperature
$T_g'$	subzero glass transition temperature of the amorphous solute/ unfrozen water matrix surrounding the ice crystals in a maximally freeze-concentrated aqueous solution
$T_g/T_m$	ratio of $T_g$ to $T_m$
$T_{gel}$	gelation temperature
$T_{gelat}$	gelatinization temperature
$T_h$	homogeneous nucleation temperature
$T_h/T_m$	ratio of $T_h$ to $T_m$
$T_{im}$	"insipient melting" temperature
$T_{liq}$	liquidus temperature
$T_m$	crystalline melting temperature
$T_m/T$	reduced temperature
$T_m/T_g$	ratio of $T_m$ to $T_g$
$T_m/T_h$	ratio of $T_m$ to $T_h$
$T_r$	recrystallization temperature
$T_s$	sorption temperature
$T_{sol}$	solidus temperature
$T_{sp}$	sticky point temperature
$T_{vap}$	vaporization temperature
$t$	time
UFW	unfrozen water
$V$	volume
$V^\circ$	partial molar volume
V-type	polymorphic crystalline form of starch
vs.	versus
$W$	water content
$\Delta W$	water content differential (e.g. $W - W_g$ )
WBC	"water-binding capacity"

$W_g$	content of plasticizing water in an aqueous glass at its $T_g$
$W_g'$	content of plasticizing water in an aqueous glass at its $T_g'$
WLF	Williams-Landel-Ferry
$W_s$	water content at $T_s$
$w$	weight (or mass) fraction
$w/w$ or $w:w$	composition of a mixture, expressed as a weight ratio
$w\%$ or $wt\%$	weight percent concentration
$w\% C$	weight percent concentration
$x$	mole fraction concentration
$x_i$	mole fraction concentration of component $i$
$x_s$	mole fraction concentration of solute
$x_w$	mole fraction concentration of water
$\eta$	viscosity
$\eta_e$	viscosity at $T_e$
$\eta_g$	viscosity of a glass at its $T_g$
$\eta_{gel}$	viscosity at $T_{gel}$
$\rho$	density
$\mu$	chemical potential
$\mu_i$	chemical potential of component $i$
$\mu_w^o$	chemical potential of water
$\mu_{cal}$	microcalorie
$\mu_m$	micrometer
$\rho_g$	density of a glass at its $T_g$
$\phi$	osmotic coefficient
$\psi$	water potential
$\tau$	relaxation time
$\tau_{rot}$	rotational relaxation time
$\%$	percent
$=$	equal to
$\equiv$	essentially identical to
$\approx$	about
$\approx$	about equal to
$>$	greater than
$<$	less than
$\geq$	greater than or equal to
$\leq$	less than or equal to
$\gtrsim$	greater than about
$\lesssim$	less than about
$\gg$	much greater than
$\ll$	much less than
$/$	per