

List of symbols and abbreviations

PART I

a,b,c	:	Lattice paramters of unit cell
C	:	Intercept of line on Y-axis
d-AHT	:	Ammonium hydrogen d-tartarate crystal
d _{hkl}	:	Interplanar spacing of (hkl) planes
F	:	Feed solution
M	:	Molarity
m	:	Slope of straight line plot
m ₁	:	Regression coefficient of y on x
m ₂	:	Regression coefficient of x on y
N	:	Normality
r	:	Correlation coefficient
W	:	Molecular weight
\bar{x}	:	mean (average) value
\bar{y}	:	mean (average) value
o	:	Temperature in °C
dθ	:	temperature difference
ρ	:	density of d-AHT
ρ'	:	density of kerosene

PART II & III

A	: area of cross section : angle of orientation of the longer diagonal of the Knoop indentation mark measured with respect to the specified direction
A ₀	: initial area of cross-section
a	: standard hardness (constant)
A _R	: axis of rotation
b	: constant
c	: constant : constant of indenter geometry
d	: diagonal length of Knoop indentation mark
E	: Young's modulus of elasticity
e, f	: constant
F	: Free, face (facet)
H	: average hardness in high load region
HLR	: high load region
h ₀	: minimum value of hardness in the quadratic equation of H Vs A
ILR	: intermediate load region
K	: constant
l	: length after small compression
l ₀	: initial length
LLR	: low load region
n	: slope of the plot of log d vs log P
n ₁	: slope of the plot of log d vs log P in LLR
n ₂	: slope of the plot of log d vs log P in HLR
P	: load in gms; constant
r	: constant of indenter geometry
RT	: Room temperature

SMS : Sodium metasilicate solution
Sp.gr. : Specific gravity
t : time
T : absolute temperature
TA : tartaric acid solution
W : Newtonian resistance pressure
O : Bragg angle
d : path difference
d : wavelength of x-ray beam
 σ : compressive stress
 ϵ : compressive strain

PART IV

B	:	breadth of an etch pit
C	:	concentration of an etchant
E	:	activation energy
E_t	:	activation energy for tangential dissolution
E_s	:	activation energy for surface dissolution
K	:	Boltzmann constant :
L	:	Length of an etch-pit
R	:	Universal gas constant
V	:	rate of dissolution
V_t ,	:	lateral/tangential or ledge dissolution velocity
V_L	:	parallel to the surface
V_n	:	dissolution velocity normal to surface
V_s	:	rate of surface dissolution
V_{nd}	:	normal dissolution velocity at a dislocation
V_{ndf}	:	normal dissolution velocity of a dislocation-free portion of the surface