

## Nomenclature

s	Time in seconds
LOI	Limiting Oxygen Index
$l_p$	Pyrolysing length
$V_p$	Flame spread rate
$V_{p\infty}$	Pyrolysis constant spread rate
$\beta$	Coefficient of thermal expansion ( $K^{-1}$ )
V	Vertical flame spread
d	Flame spread distance
T	Time of spread of flame
FR	Flame Retardant
$H_b$	Heat of burning in air
$H_r$	Rate of heat generation per unit sample width
$H_c$	Heat of combustion in oxygen bomb calorimeter
$H_L$	Percent of $H_c$ liberated by burning in air.
LPG	Liquid petroleum gas
$\Omega$	Injury factor/ burn damage integral
$\Delta E$	Activation energy ( $6.28 \times 10^8 \text{ J/k mol}$ )
P	Pre-exponential term used for injury factor ( $3.1 \times 10^{98} \text{ s}^{-1}$ )
T	Absolute temperature in K
R	Stefan Boltzmann constant ( $1.986 \text{ cal/mole K}$ )
BHPT	Burn Hazard Potential Tester
$T_1, T_2, T_3$	Timing devices
$T_4$	Temperature display tutor
D1	Distance from the bottom line of the specimen to the micro burner tip at the vertical centre of the specimen
D2	Distance between micro burner tip and specimen face
$T_{ig}$	Time for ignition
FPR	Flame Propagation Rate
BR	Burning Rate
$H_a$	Heat absorbed ( $\text{cal/cm}^2$ )
$Q_i$	Incident Heat Flux ( $\text{cal/cm}^2\text{s}$ )
AIHF60	Average Incident Heat Flux for initial 60 Seconds
TBSA	Total Body Surface Area
x	Total depth of the skin
y,z	Depth of skin in y and z directions
$x_1$	Depth at base of epidermis( 80 $\mu\text{m}$ )
$x_2$	Depth at base of dermis(1920 $\mu\text{m}$ )
$x_3$	Depth at base of hypodermis (5000 $\mu\text{m}$ )
$\rho_1$	Density of epidermis ( $1150 \text{ kg/m}^3$ )

$\rho_2$	Density of dermis (1200 kg/m <sup>3</sup> )
$\rho_2$	Density of hypodermis (1000 kg/m <sup>3</sup> )
$C_1$	Specific heat of epidermis (3600 °kJ/kg)
$C_2$	Specific heat of dermis and (2400 °k J/kg)
$C_3$	Specific heat of hypodermis (3000 °k J/kg)
$C_s$	Specific heat of silver plate (0.056 cal/°c/gm)
$C_b$	Specific heat of blood (4000 °C J/kg)
$T_c$	Temperature of core of skin at base of hypodermis (37°C)
$T_s$	Temperature at the surface of the skin
$k_1$	Thermal conductivity of epidermis (0.209 °k W/m)
$k_2$	Thermal conductivity of dermis (0.380 °k W/m)
$k_3$	Thermal conductivity of hypodermis (0.210 °k W/m)
$Q_i$	External incident heat flux (k W/m <sup>2</sup> )
$Q_m$	Volumetric metabolic heat flux. (420 W/m <sup>3</sup> )
$T_1$	Temperature of epidermis
$T_2$	Temperature of dermis
$T_3$	Temperature of hypodermis
$A_1$	Cross sectional area between epidermis-dermis (cm <sup>2</sup> )
$A_2$	Cross sectional area between dermis-hypodermis (cm <sup>2</sup> )
$L_1$	Length of epidermis (mm)
$L_2$	Length of dermis (mm)
$W_b$	Blood profusion rate (0.5 kg/m <sup>3</sup> s)
$T_a$	Artrial temperatute(37°C)
$T_r$	Room temperature
$Q_{1-2}$	Conduction Heat transfer relation between epidermis and dermis
$Q_{2-3}$	Conduction Heat transfer relation between dermis and hypodermis
SA1-SA10	Saree fabrics (Ten types of fabric material: 1 to 10)
PL	Petticoat fabrics (light)
PH	Petticoat fabrics (heavy)
B	Bra fabric
UV	Underwear fabric
B(C)	Blouse fabric (cotton)
B(PC)	Blouse fabric (polyester:cotton)
B(P)	Blouse fabric (polyester)
C-H	Carbon hydrogen bond