

Characteristics of CaSO₄: Dy Teflon TLD disc

Ratio of CaSO ₄ : Dy and Teflon	:	1: 3
Effective Atomic Number (Z)	:	15.1
Density of the TLD Disc	:	2.52 g/cm ³
Softening Point of Teflon	:	330° C
Main Glow Peak Temperature	:	230° C
Sensitivity of TLD Disc	:	About 30-40 times more than LiF TLD-100
Fading	:	2-3% in six months
Climactic Effect	:	Negligible
Effect of Sunlight	:	Negligible when covered by paper wrapper & polythene pouch and loaded in the badge
Useful Linear Dose Range	:	0.10 mSV to 20 SV (linearity within + 10%)
Reusability	:	20 cycles
Beta Response	:	60% of 60Co gammas for Nat.U (effective energy 0.8Mev)
Thermal Neutron Response	:	60Co gamma ray equivalent to 2.4 mGy per 1010 n/cm ²
Fast Neutron Response	:	Negligible

(iii) TLD CASSETTE

- Two/Three well-defined regions in the plastic cassette / holder corresponding to Two / Three TLD discs of the TLD card.
 - i. Disc D1- sandwiched between a pair of filter combination of 1.0mm thick Cu (Copper filter nearer to the disc).
 - ii. Disc D2- sandwiched between a pair of 1.6mm thick (180mg/cm²) plastic filters and (Not available for 2 disc version)
 - iii. Disc D3- under a circular open window.
- The asymmetric “V” cut of the card permits its loading in the plastic cassette in only one orientation and ensures proper positioning of three disc.
- For identification purposes, photograph of the user could also be permanently fixed on the central transparent region of the badge.
- There are two types of TLD badges/ cassettes in use namely,
 1. Chest Badge for whole body monitoring and
 2. Wrist Badge for extremity dosimetry

Though the dosimeter and design of both TLD badges are same, they have different attachment (clip/strap) for wearing purpose depending on their use.

TLD CASSETTE DIMENSIONS

In this design of the TLD cassette, dimension of some of the filters was altered and crocodile clip was replaced by a smaller size clip. The cassette was made of ABS plastic (white) and filters were embedded into the plastic body.

