

MULTI-LAYERED OPTICAL DISC

ABSTRACT

A multi-layered optical disc having its recording unit comprised of plural information recording layers, in which two or more information recording layers are layered on a substrate 0.3 to 1.2 mm in thickness, with the interposition of a transparent layer, to form a recording unit, a light transmitting protective layer is formed on the recording unit to a thickness of 10 to 177 μm , and in which the light is illuminated from the side of the light transmitting protective layer to effect recording and/or reproduction of information signals. At least one of the information recording layers except the information recording layer formed at a remotest position from the light transmitting protective layer has a phase change material as a recording material. A refractive index nc_1 and an extinction coefficient kc_1 in the crystallized state and a refractive index na_1 and an extinction coefficient ka_1 in the amorphous state of the phase change material constituting the first information recording layer as counted from the light transmitting protective layer satisfy the relationship of $(nc_1/na_1) \leq 12$, $(kc_1/ka_1) \leq 12$ and $(kc_1/ka_1) \leq 5 (nc_1/na_1)$, where the cases of $kc_1/ka_1 < 1$ and $nc_1/na_1 < 1$ are excluded.

Figure 1