This research aims to thoroughly assess $TlSrF_3$'s mechanical, elastic, anisotropic, electrical, and optical properties between 0 GPa and 400 GPa of pressure. There is a drop in lattice parameters, but the structure remains cubic and no phase transition occurs by applying external pressure ranging from 0 to 400 GPa. Through arithematic computation of several mechanical and elastic characteristics, it is determined that the material is stable mechanically at different pressures except 0 GPa, 320 GPa, 360 GPa and 400 GPa. Poisson's ratio, Pugh/Frantsevich ratio, Kleinman's parameter and Cauchy pressure have all demonstrated the metallic bond nature, the material's elasticity and high-pressure persistence. The elasticity, resistance to plastic deformation, anisotropy of elasticity and volume changes under pressure of metallic bonded materials are all determined by these parameters, which guarantee high-pressure persistence. Our material shows anisotropic behaviour at different anisotropy factors. When the electronic band structure (BS) is taken into account, from 0 to 40 GPa there is a minor increase in band gap from 4.229 eV to 4.254 eV. A shift from broad bandgap semiconductor (4.254 eV) to metal (0 eV) is observed from 40 GPa to 400 GPa. The electronic BS has been examined by the estimation of the partial, elemental and total densities of states, respectively. The real and imaginary conductivity, refractive index $n(\omega)$, extinction coefficient $k(\omega)$, loss function $L(\omega)$, absorption $I(\omega)$, reflectivity $R(\omega)$ and real/imaginary dielectric functions have been computed to emphasize the material's applicability further. As pressure is applied, the static values of $\varepsilon_1(\omega)$ and $n(\omega)$ rise. This is an ideal material for UV filters since its absorbance spectra are in the UV area. Its excellent conductivity, reflectance, absorbance and refractive index make it an ideal element for optoelectronic devices.