Established in 1989 and based in New York, LTS has been pushing boundaries in the development and implementation of high-purity optical coating materials since its inception.

LTS produces high purity and high performance materials for the optics and fiberoptics, electronics, automotive, aerospace, medical, defense, crystal growth, and fuel cell industries, and are constantly developing new products and applications for our clients. We pride ourselves on our superb materials quality: whether it’s a standard formulation or researching and developing new chemicals and compounds, we work to provide you with products unparalleled in their respective industries.

Our research and development team comprises experts in chemistry, chemical engineering, mechanical engineering, materials science, vacuum engineering, and high-caliber machining. Our production process is vertically integrated from raw materials procurement to the final finishing process, giving us precise control in creating materials to exact specifications.

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Scandium oxide is a high laser damage threshold optical coating material for use in UV laser applications at 337 nm and 248 nm. It has a LDT of >6 J/cm² as well a moderately high index of refraction of ~1.8 at 550 nm. It is durable and has good adhesion promotion.

These properties make Sc₂O₃ a valuable antireflection / high-reflection and multilayer coatings material for ultraviolet applications as well as visible and infrared.

Unfortunately, due to its ores’ rarity, scandium oxide is also very expensive.

For this reason, LTS has developed scandates with similar or better optical properties that are cheaper and more accessible to the medium budget user. These are based on compounding scandium oxide with other rare earth oxides to form ternary compounds with less than half the scandium content but equivalent optical properties, including higher density and refractive index.

Available as Powder, Sintered pieces, Melted+outgassed pieces, and Sputter targets. Purity: 99.99 %

Analogous materials can be made such as DyScO₃ and TbScO₃