



Materials, Coatings & Processes



Automation & Robotics



Mechanical Components & Systems



Electronics & Optoelectronics



Digitisation, Computer Hardware & Software



Communication & Information



Sensors & Measurement Techniques



Life sciences, Pharmacy & Medicine



Precision Mechanics & Optics



Energy



Services



Other technologies



TECHNOLOGY DESCRIPTION

Calomel (mercurous chloride, Hg_2Cl_2) is a tetragonal crystal material, transparent from the visible ($0.38 \mu m$) up to the infrared region ($17 \mu m$), which exhibits a very strong birefringence ($\Delta n = +0.683$). Its characteristics make Calomel a great candidate for infrared (IR) optical components such as polarisers, polarising beamsplitters, Savart plates, AO (Adaptive Optics) cells, etc. Calomel IR components are suitable for application areas which require a high degree of IR polarisation, like spectroscopy, astronomy, optical laboratories, the chemical industry, etc.



INNOVATIVE ASPECTS

AO (Adaptive Optics) units currently available on the market are restricted by the limit transparency of the material used, which typically accounts for $5 \mu m$. With a limit transparency of $17 \mu m$, Calomel creates new opportunities for acoustic frequency modulated filters, especially in a spectral window around $10 \mu m$. Calomel has a large potential as an acousto-optic modulator or deflector. These are devices that can select and control the wavelength of light passing through them by using sound waves to diffract and steer the light. The high AO figure of merit of Calomel and the extremely low velocity of acoustic waves are key parameters for an AOTF (Acousto-Optic Tunable Filter).



TECHNOLOGY READINESS (in space application)

TRL 9 (2024)

COUNTRY OF ORIGIN

Czech Republic

LATEST UPDATE

04/2024

TAGS

#calomel

#transparent

#infrared

#optics

#polarisation

#AOTF

APPLICATION AREAS

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