

Material Survey Results

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Material Survey

Starting Material List (23)
Aluminum Oxinitride (ALON)
Arsenic Trisulfide
Barium Fluoride
Cadmium Telluride
Calcium Fluoride
Gallium Arsenide
Germanium
IRG2
IRG3
IRG4
IRG5
IRG6
Lithium Fluoride
Magnesium Aluminate (spinel)
Magnesium Fluoride
Magnesium Oxide
Potassium Bromide
Sapphire
Silicon
Thallium Bromo-Iodide
UVIR Glass
Zinc Sulfide
Zinc Selenide

Starting Properties List (13)
Refractive Index
dn/dT
Homogeneity
Birefringence
Inclusion Size
Absorption Coefficient
Thermal Expansion Coefficient
Elastic Modulus
Hardness
Thermal Conductivity
Specific Heat
Specific Gravity
Photoelastic Constant

Rules

1. Prioritize each material and property (0-10).
2. Any priority can be assigned to any material.
3. No response = 0 priority.
4. Write-ins are allowed.

Ending Properties List (27)

Property	Average Priority
Refractive Index	8.6
Absorption Coefficient	7.4
dn/dT	7.3
Homogeneity	7.0
Thermal Expansion Coefficient	6.4
Inclusion Size	5.6
Birefringence	4.9
Hardness	4.5
Thermal Conductivity	4.5
Elastic Modulus	4.5
Specific Gravity	3.3
Specific Heat	3.1
Photoelastic Constant	2.5

Property	Average Priority
Static Flexural Strength	0.3
Slow Crack Growth Strength	0.3
Glass Transition Temp	0.3
Strength	0.3
Toxicity	0.3
Poisson Ratio	0.3
Rupture Modulus	0.3
Inclusion Composition	0.3
Weibull Parameter	0.3
Fracture Toughness	0.3
Bulk Scatter	0.2
Resistivity	0.2
Fluorescence Spectra	0.1
Defect Density	<0.1

For planning purposes ...

Material (15)
Germanium
Zinc Selenide
Zinc sulfide
Silicon
Calcium Fluoride
IRG2 Glass
IRG4 Glass
IRG5 Glass
IRG6 Glass
IRG3 Glass
Barium Fluoride
UVIR Glass
Magnesium Fluoride
Gallium Arsenide
Magnesium Aluminate

Property
Refractive Index
Absorption Coefficient
dn/dT
Homogeneity
Inclusion Size & Density
Birefringence
Photoelastic Constant