

# New Deposition Substrates from Aldrich

## Single Crystal Substrates (10 X 10 X 0.5 mm, single side polished)

| Catalog Number | Composition                    | Formula   | Orientation | Crystal Type              | Unit Cell (Å)          | Melting Point (°C) | Density (g/cm <sup>3</sup> ) | Hardness (Moh) |
|----------------|--------------------------------|---|-------------|---------------------------|------------------------|--------------------|------------------------------|----------------|
| 63,487-5       | Aluminum oxide                 | Al <sub>2</sub> O <sub>3</sub>  | (0001)      | Hexagonal                 | a = 4.758, c = 12.992  | 2040               | 3.98                         | 9              |
| 63,473-5       | Lanthanum aluminum oxide       | LaAlO <sub>3</sub>  | <100>       | Rhombohedral <sup>1</sup> | a = 5.357, c = 13.22   | 2080               | 6.52                         | 5.9            |
| 63,505-0       | LSAT <sup>2</sup>              | (LaAlO <sub>3</sub> ) <sub>0.3</sub> (Sr <sub>2</sub> AlTaO <sub>6</sub> ) <sub>0.7</sub> | <100>       | Cubic                     | a = 3.868              | 1840               | 6.74                         | 6.5            |
| 63,507-3       | Magnesium aluminate            | MgAl <sub>2</sub> O <sub>4</sub>  | <100>       | Cubic                     | a = 8.083              | 2130               | 3.64                         | 8              |
| 63,484-0       | Magnesium aluminate            | MgAl <sub>2</sub> O <sub>4</sub>  | <110>       | Cubic                     | a = 8.083              | 2130               | 3.64                         | 8              |
| 63,483-2       | Magnesium aluminate            | MgAl <sub>2</sub> O <sub>4</sub>  | <111>       | Cubic                     | a = 8.083              | 2130               | 3.64                         | 8              |
| 63,464-6       | Magnesium oxide                | MgO   | <100>       | Cubic                     | a = 4.216              | 2852               | 3.58                         | 5.8            |
| 63,470-0       | Magnesium oxide                | MgO   | <110>       | Cubic                     | a = 4.216              | 2852               | 3.58                         | 5.8            |
| 63,469-7       | Magnesium oxide                | MgO   | <111>       | Cubic                     | a = 4.216              | 2852               | 3.58                         | 5.8            |
| 63,486-7       | Silicon dioxide, optical grade | SiO <sub>2</sub>  | (0001)      | Hexagonal                 | a = 4.914, c = 5.405   | 1610               | 2.684                        | 7              |
| 63,489-1       | Strontium lanthanum aluminate  | SrLaAlO <sub>4</sub>  | <001>       | Tetragonal                | a = 3.756, c = 12.63   | 1650               | 5.924                        | NA             |
| 63,513-8       | Strontium lanthanum aluminate  | SrLaAlO <sub>4</sub>  | <100>       | Tetragonal                | a = 3.756, c = 12.63   | 1650               | 5.924                        | NA             |
| 63,511-1       | Strontium lanthanum aluminate  | SrLaAlO <sub>4</sub>  | <100>       | Tetragonal                | a = 3.756, c = 12.63   | 1650               | 5.924                        | NA             |
| 63,468-9       | Strontium titanate             | SrTiO <sub>3</sub>  | <100>       | Cubic                     | a = 3.905              | 2080               | 5.175                        | 6              |
| 63,467-0       | Strontium titanate             | SrTiO <sub>3</sub>  | <110>       | Cubic                     | a = 3.905              | 2080               | 5.175                        | 6              |
| 63,816-1       | Strontium titanate             | SrTiO <sub>3</sub>  | <111>       | Cubic                     | a = 3.905              | 2080               | 5.175                        | 6              |
| 63,505-7       | Titanium(IV) oxide rutile      | TiO <sub>2</sub>  | <001>       | Tetragonal                | a = 4.5936, c = 2.9582 | 1840               | 4.26                         | 7              |
| 63,504-9       | Titanium(IV) oxide rutile      | TiO <sub>2</sub>  | <100>       | Tetragonal                | a = 4.5936, c = 2.9582 | 1840               | 4.26                         | 7              |
| 63,506-5       | Titanium(IV) oxide rutile      | TiO <sub>2</sub>  | <110>       | Tetragonal                | a = 4.5936, c = 2.9582 | 1840               | 4.26                         | 7              |
| 63,510-3       | Yttrium vanadate               | YVO <sub>4</sub>  | <110>       | Tetragonal                | a = 7.12, c = 6.29     | 1825               | 4.22                         | 5              |

## Indium Tin Oxide Coated Substrates

| Catalog Number | Substrate Type                           | Surface Resistance (□Ω) | Dimensions         | Passivation Layer (Å, SiO <sub>2</sub> ) | ITO Thickness (Å) | Optical Transmittance (%) |
|----------------|--|-------------------------|--------------------|--|-------------------|---------------------------|
| 57,827-4       | Glass slide <sup>3</sup>                 | 8-12                    | 25 X 75 X 1.1 mm   | 200-300                                  | 1200-1600         | >83                       |
| 63,691-6       | Glass slide <sup>3</sup>                 | 15-25                   | 25 X 75 X 1.1 mm   | 200-300                                  | 600-1000          | >78                       |
| 63,690-8       | Glass slide <sup>3</sup>                 | 30-60                   | 25 X 75 X 1.1 mm   | 200-300                                  | 300-600           | >84                       |
| 57,635-2       | Glass slide <sup>3</sup>                 | 70-100                  | 25 X 75 X 1.1 mm   | 200-300                                  | 150-300           | >87                       |
| 57,636-0       | Aluminosilicate glass slide <sup>4</sup> | 5-15                    | 25 X 75 X 1.1 mm   | none                                     | 1200-1600         | >84                       |
| 63,693-2       | PET slide <sup>5</sup>                   | 8-12                    | 25 X 75 X 1.1 mm   | none                                     | 1200-1600         | >74                       |
| 63,692-4       | PET slide <sup>5</sup>                   | 60-100                  | 25 X 75 X 1.1 mm   | none                                     | 150-300           | >76                       |
| 63,931-1       | PET sheet <sup>5</sup>                   | 40-45                   | 1 ft X 1 ft X 5 mm | none                                     | 1200              | >86                       |
| 63,930-3       | PET sheet <sup>5</sup>                   | 50-70                   | 1 ft X 1 ft X 5 mm | none                                     | 1000              | >79                       |
| 63,928-1       | PET sheet <sup>5</sup>                   | 90-110                  | 1 ft X 1 ft X 5 mm | none                                     | 750               | >77                       |

(1) Cubic @ >435 °C, a = 3.821 Å (2) LSAT = Lanthanum aluminum oxide-strontium aluminum tantalum oxide (3) Typical composition of slide is 72.6% SiO<sub>2</sub>, 0.8% B<sub>2</sub>O<sub>3</sub>, 1.7% Al<sub>2</sub>O<sub>3</sub>, 4.6% CaO, 3.6% MgO, and 15.2% Na<sub>2</sub>O (4) Typical composition of slide is 55.0% SiO<sub>2</sub>, 7.0% B<sub>2</sub>O<sub>3</sub>, 10.4% Al<sub>2</sub>O<sub>3</sub>, 21.0% CaO, and 1.0% Na<sub>2</sub>O (5) PET = poly(ethylene terephthalate)

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