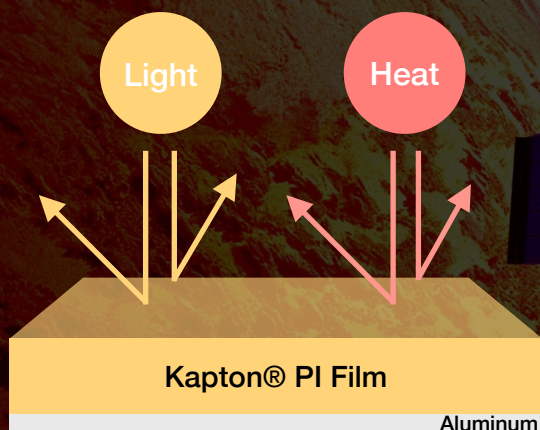
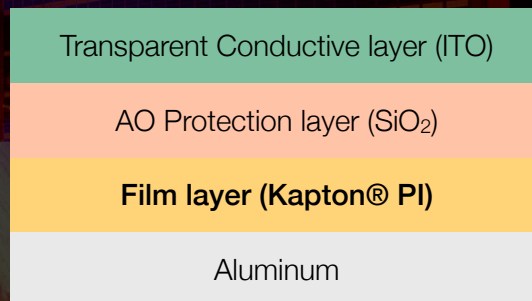




Aluminum-deposited layer reflects lights and heat



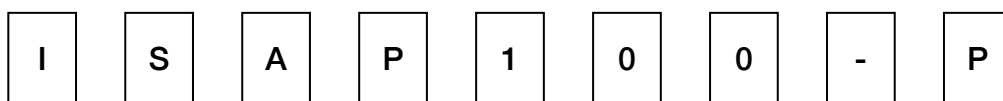
ISAP100-P

# Aluminized Kapton® Polyimide

## Multi-Layer Insulation (MLI) Materials

SQUID3 Space™ Aluminized Polyimide is a high-performance flexible film manufactured for spacecraft thermal control applications. Also known as Aluminized Kapton®, SQUID3's Aluminized Polyimide is commonly implemented in MLI blankets as internal and outermost layer. This product can be perforated to provide venting paths during launch and ascent. Manufactured using magnetron sputtering process, aluminum (Al), indium tin oxide (ITO), and silicon dioxide (SiO<sub>2</sub>) thin films are vacuum deposited onto Kapton® Polyimide substrates. Aluminization can be single-sided or double-sided. SQUID3 Space™ MLI Materials provide excellent thermophysical and optical properties. On-orbit degradation is well-characterized by NASA, ESA, and JAXA in flight literature.

### Part Number Definition



| Top Coat |                      |           |
|----------|----------------------|-----------|
| Code     | Type                 | Thickness |
| I        | ITO                  | 25 nm     |
| S        | SiO <sub>2</sub>     | 65 nm     |
| IS       | ITO/SiO <sub>2</sub> | 90 nm     |

| Aluminization |        |           |
|---------------|--------|-----------|
| Code          | Side   | Thickness |
| AP            | Single | 150 nm    |
| APA           | Double |           |

| Base Film |                     |
|-----------|---------------------|
| P         | Polyimide (Kapton®) |

| Film Thickness |           |
|----------------|-----------|
| Code           | Thickness |
| 100            | 1-mil     |
| 200            | 2-mil     |

| Perforation                                                             |
|-------------------------------------------------------------------------|
| 0.03-0.06" (0.76-1.5 mm)<br>diameter holes on 1.2"<br>(30.5 mm) centers |



# Aluminized Kapton® Polyimide Technical Datasheet

## Physical Properties

|                          |          |             |
|--------------------------|----------|-------------|
| Thickness                | mil (μm) | 1 (25.4)    |
|                          |          | 2 (50.8)    |
| Width                    | inches   | 20          |
|                          |          | 46          |
| Continuous Temperature   | °C       | -185 to 260 |
| Intermittent Temperature | °C       | -185 to 150 |



## Double-sided Aluminization (First Surface Mirror Properties)

|                         |                        |        |
|-------------------------|------------------------|--------|
| Part Number             | APA100                 | APA200 |
| Kapton® Thickness       | 1 mil                  | 2 mil  |
| Solar Absorptance       | < 0.15                 |        |
| Hemispherical Emittance | < 0.04                 |        |
| Perforation             | Available Upon Request |        |
| Lead Time               | 6~8 weeks              |        |



## Single-sided Aluminization (Second Surface Mirror Properties)

| Part Number                                    | AP100                  | SAP100 | IAP100 | ISAP100 | AP200  | SAP200 | IAP200 | ISAP200 |
|------------------------------------------------|------------------------|--------|--------|---------|--------|--------|--------|---------|
| Kapton® Thickness                              | 1 mil                  |        |        |         | 2 mil  |        |        |         |
| Solar Absorptance                              | < 0.4                  | < 0.42 | < 0.45 |         | < 0.45 | < 0.47 | < 0.5  |         |
| Hemispherical Emittance                        | > 0.65                 |        |        |         | > 0.71 |        |        |         |
| AO Resistant Coating<br>65 nm SiO <sub>2</sub> |                        | ✓      |        | ✓       |        | ✓      |        | ✓       |
| Conductive Coating<br>25 nm ITO (<1,000 Ω/sq)  |                        |        | ✓      | ✓       |        |        | ✓      | ✓       |
| Perforation                                    | Available Upon Request |        |        |         |        |        |        |         |
| Lead Time                                      | 6~8 weeks              |        |        |         |        |        |        |         |

## Materials Quality and Traceability

SQUID3 Space™ MLI materials are manufactured under a certified ISO9001:2015 Quality Management System facility. Complete material and manufacturing lot records, which include archive samples of finished product, are maintained by SQUID3. All products are shipped with a Certificate of Analysis.

Version 2026/09

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