

Application and Handling of Thermal Control Materials

Application of thermal control materials and fabrication of multilayer insulation (MLI) blankets should take place in an enclosed, controlled area. The floors should be non-dusting and the walls and ceilings free of flaking, chipping or other particle producing features. The area should be cleaned daily when fabricating operations produce visible contamination. Personnel should wear smocks, clean room head covering and, under certain circumstances, face masks. We recommend wearing nylon or powder free vinyl gloves when handling thermal control materials. Food and drink should not be permitted in the controlled area.

Vacuum deposited coatings are fragile and can be damaged by even moderate abrasion. Table tops should be covered with Tedlar or polyester and kept free of dirt, grit, and other contamination. If films do become contaminated, a light dusting with a soft camel hairbrush is acceptable. We suggest using Rymplecloth (purified wiping cloth) saturated with isopropyl alcohol to remove contaminants after brushing. A glass, polycarbonate, or acrylic sheet should be used as a cutting surface for thermal control materials. A new blade should be used for each cut to minimize tears and wrinkles.

Thermal control materials should be covered or stored in the original shipping container when not in use to prevent the accumulation of dust or dirt on the film surface.

Thermal Control materials having ITO coatings require extreme care when handled. Three-cornered folds, sliding the ITO coating on table surface, excessive handling, folding, and slight surface scratches can severely degrade the electrical continuity of the ITO.

Warranty Information

Multek warrants that our thermal control materials will meet all acceptance testing criteria for one year from the date of shipment (except Germanium, see product bulletin) if the materials have been stored indoors at standard conditions in their original packaging.

The shelf life of the material should be much longer than the warranty period. We recommend retesting any material that is more than one year old (or more than one year since most recent testing) prior to use. This will verify that the material has not been accidentally damaged. Multek offers retest services for a nominal fee.



A Multek Brand

Pressure Sensitive Adhesives

Our tapes bond best to clean, dry surfaces. Typical surface cleaning solvents include an isopropyl alcohol/water mixture and heptane. Follow the solvent manufacturer's precautionary warnings and suggested handling procedures.

Bond strength depends on the amount of adhesive to surface contact developed. Firm application pressure develops better adhesive contact and thus improves bond strength. After application the bond strength will increase as the adhesive flows onto the surface. At room temperature approximately 50% of the ultimate bond strength will be achieved after 20 minutes, 90% after 24 hours, and 100% after 72 hours. In some cases bond strength can be increased and ultimate bond strength can be achieved more quickly by exposure to elevated temperatures [e.g. 150°F (65°C) for one hour].

The ideal temperature range for applying tapes is 70°F to 100°F (21°C to 39°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.