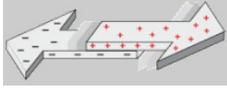


Hidden Costs of Acrylic Enclosures

Compared to acrylic, static-dissipative PVC offers three benefits that reduce operating expenses and drive down overall ownership cost of a clean room, glove box, hood, desiccator, or other enclosure.



1. Contamination Control

Acrylic is a prolific static generator. The back-and-forth motion of wiping an acrylic surface creates positive and negative surface charges that attract and hold small particles. Even laminar airflow may be enough to create these surface charges.

The resulting static cling makes it nearly impossible to remove contaminants from the charged surfaces without the use of ionizing equipment or frequent cleaning with special anti-static solutions. Variations in the surface charges can lead to unpredictable release of aggregated particles, threatening contamination-sensitive material.

For this reason, expect acrylic to drive up the cost of keeping an acrylic enclosure contamination-free.



2. Germ Control

An aseptic environment requires frequent sterilization with disinfectants such as alcohol. Unfortunately, most common biocides, including industry-standard IPA solutions, degrade acrylic, causing cracks and discoloration.

Static-dissipative PVC, on the other hand, resists alcohol and most other sterilizing solutions, supporting standard disinfecting procedures and extending the life of your enclosure.



3. ESD Control

Acrylic's most serious hidden cost becomes apparent when static-sensitive materials are destroyed or degraded by unpredictable electro-static discharge (ESD).

Whether it results from hand-wiping the acrylic surface or from the micro-frictional effects of a strong airflow, surface static charge poses serious threat to semiconductor, electronics, and other sensitive materials. In fact, acrylic supports the accumulation and discharge of up to 20,000 volts. This danger is especially acute in a low-humidity environment like a nitrogen-purged glove box or desiccator.

Why Consider Acrylic?

Despite these disadvantages, acrylic is widely used in clean rooms and other critical environment applications. Its low initial cost, light weight, transparency, and strength make it an attractive choice in many situations and Terra offers most of its enclosures in acrylic in order to provide a competitive option.

In critical applications, however, acrylic should be avoided. Lower total ownership costs – due to easier cleaning, sterilization, and ESD control – quickly justify the initial expense of a static-dissipative PVC enclosure.

Ultimately, the advantage of a static-dissipative PVC enclosure is even more compelling: peace of mind that your products are housed in an inherently safe environment.