Materials Engineering Branch

TIP*

No. 085 Preparing Polyethylene Bags for Packaging Flight Hardware

Author(s): Carl. L. Haehner Contact: (301) 286-6882

With the increase in the number of scientific payloads that require strict contamination control, it becomes important to take the proper precautions in the use of packaging materials to avoid introducing contaminants. For instance, in a large number of cases where antistatic properties are not required, conventional "Zip-Lock" polyethylene bags have been and continue to be widely used. However, unless the user is aware that such items contain a slip agent on their inside surfaces to prevent the material from sticking to itself, there is a strong possibility that specially cleaned flight hardware can inadvertently become contaminated.

Needless to say, the "Zip-Lock" polyethylene bags require a cleaning process prior to use in order to remove the slip-agent, a potential contaminant to flight hardware. An easy method for cleaning these commercially available polyethylene bags is as follows:

- Turn the bag inside out to expose the inside surface
- Rinse the exposed surface thoroughly with Reagent Grade (or better) isopropyl alcohol (use proper precautions with the alcohol fumes with respect to flammability and toxicity) and blow dry until the alcohol is completely evaporated. If any residual alcohol remains in the bag it will almost certainly promote corrosion.
- Return the bag to its original position (outside in)
- Rinse the external surface with Reagent Grade alcohol

A polyethylene bag cleaned in this manner can be used to store components that have been processed for space flight use without the possibility of introducing contamination (from itself) and to prevent contamination from the environment. For long-term storage, heat sealing and double bagging are recommended. As a precaution, be aware that "Zip-Lock" polyethylene bags

are not antistatic and that electronic parts sensitive to electrostatic discharge may require special packaging.