

Container Assembly and Closure Instructions

One of the most important and often overlooked requirements of the performance-based packaging standards first introduced and incorporated into the Hazardous Materials Regulations (HMR), Title 49 of the Code of Federal Regulations (49 CFR), in the early 1990s, is the one relating to closing instruction.

Title 49 CFR §178.2 (c) states that,

“Except as specifically provided in §178.337–18 and §178.345–10 of this part, the manufacturer or other person certifying compliance with the requirements of this part, and each subsequent distributor of that packaging shall—

- (1) Notify in writing each person to whom that packaging is transferred—
 - (i) Of all requirements in this part not met at the time of transfer, and
 - (ii) With information specifying the type(s) and dimensions of the closures, including gaskets and any other components needed to ensure that the packaging is capable of successfully passing the applicable performance tests. This information must include any procedures to be followed, including closure instructions for inner packagings and receptacles, to effectively assemble and close the packaging for the purpose of preventing leakage in transportation. ***”



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Stated simply, the manufacturer is responsible for testing and certifying that the package is capable of meeting the performance tests requirements based on its marking. The manufacturer is also required to provide its customer with written instructions concerning how to properly close the container in the same manner as was used to pass the performance tests.

Container users have the responsibility to assemble the container for shipment in accordance with the manufacturer's instructions, including ensuring that the proper plugs and gaskets are being used, and for providing these instructions to each subsequent user of the package. The container user and/or shipper must also maintain a copy of the closing instructions. The instructions must be conveyed in hard copy form as current regulations stipulate that electronic versions or transfer of these instructions is not permissible.

Since manufacturers may use different closure systems and employ different manufacturing techniques, universal closing instructions are not available. There are, however, several basic requirements that all closing instructions should contain.

1. The torque requirements for each fitting type.

Some manufacturers may express this information as a torque range, whereas others may state the information as a minimum torque that must be achieved to properly close the package. It is also very important to pay attention to the gasket types. For example, rubber or buna gaskets, most often, will have a torque requirement that is different from that required for a polyethylene gasket. The torque requirements are generally expressed in ft. lbs. or N•m (Newton Meters)

2. Open head container closing instructions.

These instructions are often more detailed and differ substantially from the fitting torque requirements.

Open head closing instructions may include:

- a. Instructions for proper installation of the drum cover and closing ring that may include how to

properly tighten the ring bolt by tapping the outside of the closing ring;

- b. Torque specifications for the bolt;
- c. A requirement, in some cases, for a minimum gap at the ring ends;
- d. Instructions on how to tighten the jam nut, when applicable; and,
- e. Instructions on how to install flexspouts and tighten all plugs and screw caps to the recommended torque.

Whether you are using a closed head or open head container to package your product, proper container closing is essential to ensure its safe transport as well as to comply with the DOT's Hazardous Materials Regulations. It is equally important to insure that originally supplied closure materials are used and that no substitutions of covers, rings, plugs, removable liners, screw caps, spouts or gaskets have been made. Failure to use originally supplied closure materials may void the container as being approved under Title 49 CFR.

As required by the HMR, your container supplier has provided these instructions to you in the past or includes them with each shipment you receive. Please be sure that you are in possession of these instructions and that they are in the hands of the workers responsible for final closure of the containers.

Consultation with your firm's safety professionals also is recommended to ensure that closing tools and procedures do not create any hazardous conditions within your facility.

Note: The information contained in this brochure is based on SSCI's best knowledge as of the date of publication in 2006. It is the responsibility of any filler or user of steel drums and pails to ensure that the unique characteristics of products contained therein or any reformulation of products are accurately described to the drum/pail and lining manufacturers. Customers, fillers and users should consult the appropriate professional for assistance in compliance with the responsibilities outlined hereunder.