

Varicon, LLC Container Closure Instructions (Per 49CFR § 178.2(c))

All Containers identified below must be closed for shipment using only the components supplied and specified in Varicon's design qualification tests according to the following installation instructions (regulated and non-regulated material fills)

30 - 55 Gal. Plastic Non-Removable Head (Tighthead) Drums: UN 1H1, 49 CFR 178.509(a)(1)

Drum Mfg.	Plug Description*	2" Plug Torque (Ft. Lbs.)
Varicon	2" Buttress and 2" NPS plug (solid or vented)	25
Mauser	2" Buttress and 2" NPS plug (solid)	20

Ensure closure threads are dry prior to insertion of plugs.

30 - 57 Gal. Plastic Removable Head (Openhead) Drums: UN 1H2, 49 CFR 178.509(a)(2)

Drum Body Mfg.	Lid / Plug Description*	2" Plug Torque (Ft. Lbs.)	3/4" Plug Torque (Ft. Lbs.)
Varicon	Solid Lid (no openings for plugs)	n/a	n/a
Varicon	2" NPS plug (solid) and 3/4" NPS plug (vented) self-seal	see (4)	see (4)
Mauser	2" NPS plug (solid) and 3/4" NPS plug (vented) self-seal	see (4)	see (4)
Greif	2" NPS plug (solid) and 3/4" NPS plug (vented) self-seal	see (4)	see (4)

- 1) Place lid with gasket on sealing surface of drum body.
- 2) With steel locking ring over lid, press down on lid and close ring lever and flip latch to secure lid on drum body.
- 3) Ensure lid is uniformly covered by locking ring and ring has proper fit with drum body.
- 4) Tighten any plugs an additional quarter turn after gasket contact or plug contact is made with lid sealing surface.

275 - 330 Gal. Composite Intermediate Bulk Containers (IBCs): UN 31HA1, 49 CFR 178.702

Bottle Mfg.	Cap / Plug Description*	Cap Torque (Ft. Lbs.)	2" Plug Torque (Ft. Lbs.)	3/4" Plug Torque (Ft. Lbs.)	Valve Collar Torque (Ft. Lbs.)
Varicon	6" solid cap (M5568 embossed on bottle)	50	n/a	n/a	50
Varicon	6" cap w/ 2" NPS plug with or w/o 3/4" NPS vented plug	50	20	9	50
Varicon	6" cap w/ or w/o 2" NPS plug w/ or w/o 3/4" NPS vent plug	50	20	9	55-60 (w/liner installed)
Mauser	6" solid cap (Mauser logo embossed on cap & bottle)	70	n/a	n/a	50 / 70 **
Mauser	6" cap with 2" NPS plug	70	20	n/a	50 / 70 **
Schuetz	6" or 9" solid cap (Schuetz logo embossed on cap & bottle)	75	n/a	n/a	55 (old style) / ***
Schuetz	6" or 9" cap with 2" NPS plug w or w/o 3/4" NPS plug	75	20	9	55 (old style) / ***
Greif	6" cap with or without 2" NPS plug or 2" Buttress plug	45	20	n/a	50

- 1) Ensure closure thread is dry prior to applying caps and plugs.
- 2) Align lead-in thread of bottle and cap & push down while turning cap clockwise to engage threads. Torque all caps and plugs to values on table.
- 3) Ensure Valve Handle remains in the closed position.
- 4) If liner is installed, twist fill spout, fold 3" down and seal w/ 8.8" nylon cable tie; Keep liner bib visible on bottle opening.

** : Mauser bottle with Banjo Valve: 50 Ft. Lbs.; Mauser bottle with Butterfly and Cylinder Integrated Valve: 70 Ft. Lbs.

*** : Schuetz New Style Valves: Two turns & line hole up in valve body and hole on the bottle insert and insert clip.

* NOTE: ALL LIDS, CAPS and PLUGS REFERENCED ABOVE HAVE GASKETS EXCEPT "SELF-SEAL" PLUGS.

350 Gal. Hoover Stainless Steel IBCs with Plastic Liner Installed: UN 31A, 49 CFR 178.702

Part Mfg.	Cover / Cap & Ring & Bolt / Plug / Valve / Liner Description	Component Tightening / Torque requirements
Hoover	22" steel cover w/ 22" steel clamp ring and EPDM gasket	Tighten 5/8" bolt until clamp ring ends are 0.5 - 0.7" apart
Girard	3" steel filling cap with Teflon gasket and fusible vent	Tighten cap 1/8 turn after gasket contact - appx. 30 ft.lbs.
Hoover	2" steel hex-head fill plug with Teflon gasket	Tighten plug 1/8 turn after firm gasket contact
Various	2" stainless steel ball valve assembly components	Tighten components fully using nylon tape; close valve
CDF	4 mil flexible bottle liner; Keep bib visible on bottle opening	Twist fill spout, fold 3" down, seal w/ 8.8" nylon cable tie