



Standard Classification of Child-Resistant Packages¹

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1. Scope

1.1 This classification covers various types of child-resistant packages.

1.2 The examples for each type of child-resistant packaging are not intended to be all-inclusive, but are included only as an aid in the understanding and comprehension of each type of classification.

1.3 Listings are not to be considered endorsements or approval of the package by ASTM.

2. Terminology

2.1 Definitions of Terms Specific to This Standard:

2.1.1 *child-resistant package*—as defined by the *Poison Prevention Packaging Act*, packaging that is designed or constructed to be significantly difficult for children under five years of age to open or obtain a toxic or harmful amount of the substance contained therein within a reasonable time, and not difficult for normal adults to use properly, but does not mean packaging which all such children cannot open or obtain a toxic or harmful amount within a reasonable time.²

2.1.2 *unit dose package*—an immediate product container/package designed and labeled in such a manner that each individual product package is intended to be opened or used one time in a generally non-reclosable or non-resealable manner, separately from the other individual product units in the package, or the entire contents of a single unit package intended for use in one application.

2.1.2.1 *Discussion*—Normally used for pharmaceutical, human healthcare, and nutritional products in dry solid, topical, transdermal, or liquid form. A unit of sale package may contain one or more individual unit dose packages, that is, individually wrapped transdermal patches, pre-filled syringes and syringe cartridges, blister cards with multiple tablets or capsules, and

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² Code of Federal Regulations, Title 16, Part 1700 and Title 40, Part 157. Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

so forth. Unit dose packages may or may not be child-resistant in accordance with the regulatory requirements of the package contents.

2.1.3 *unit use/single use package*—an immediate product container/package, which may include label directions for use, designed in such a manner that each individual product package is intended to be opened or used one time separately from the other individual product units in the package, or the entire contents of a single unit package intended for use in one application.

2.1.3.1 *Discussion*—These packages are generally non-reclosable or non-reusable. A unit of sale package may consist of one or more non-reusable individual packages. Generally used for household, automotive, chemical, pesticide, veterinary, garden and other products not intended for human ingestion. Package styles may include some aerosol, that is, foggers, soluble film, canisters, pouches, and so forth, filled with liquids, dries, powders, and other product forms. Packages may or may not be child-resistant in accordance with the regulatory requirements of the package contents.

3. Significance and Use

3.1 This classification scheme defines the type of motions, skills, or tools required for a particular type of child-resistant package and provides examples of current packaging within that type.

3.2 Reference to a particular package in this classification is not intended in any manner to denote endorsement or approval of the package by ASTM.

3.3 Packages have been included as examples based on manufacturers' claims of child-resistance. Child-resistant package functionality for any specific product type must be determined by the packager/manufacturer following the guidelines of the PPPA of 1970 and the most current version of the CFR Title 16 Part 1700 and Title 40 Part 157.² The listing of a package in this classification is not an indication of whether or not it has been successfully tested in accordance with the aforementioned guidelines.

3.4 Additions or deletions to the examples should be reported to Committee D10 on Packaging, for incorporation into this classification during the next revision.

4. Basis of Classification

4.1 The functional basis for classification and the classifications appear in **Table 1**.

TABLE 1 Classification of Child-Resistant Packages

| | Description | Example |
|--|--|---|
| TYPE I RECLOSABLE PACKAGING—CONTINUOUS THREAD CLOSURE | | |
| A | Random push down while turning; no orientation of the push down force necessary | Kerr CR-I, II, III, IV and CRTE; Rexam Healthcare Clic-Loc and Clic-Loc III, Argus-Loc, Ultra-Loc, Ultra-Loc "C"; Alcoa Tot-Gard III; Van Blarcom metal-on-metal, Saf-Cap I, II, III, and IIIA; Ferdinand Gutman; Poly Seal Corp.; Reliable Products; Rexam Healthcare F.G. (Final Generation), Carow-Turnloc; Comar-Secure Cap; Reike-FS652; CCL Container Corporation (tube) & RPC Containers Ltd. (closure) Tube Secure; Van Blarcom Closures Inc. Dropper Closure, Saf-Cap Convertible, 1-1/8 Beta Closure; Bericap North America, Bericap SK28/26 CR Slitband; Sanner of America, Child Resistant Screw Cap; Mold-rite Plastics CRC Pictorial Screw Cap, PDT Push Down & Turn Screw Cap; Drug Plastics & Glass Co., Inc. SecuRx; Gerresheimer Boleslawiec S.A. NG 38C; Berry Plastics Corporation CR-I/TEIII; Berry Plastics Corporation CR-III; Berry Plastics Corporation CR3A/LR; Berry Plastics Corporation CR5; Berry Plastics Corporation CR4; Berry Plastics Corporation MAC Duma |
| B | Localized squeeze force while turning; the force must be applied to a designated location on the closure skirt | Econo-Lok, DOT, Dougherty Brothers; Fastex; Rexam Healthcare Squeeze and Turn; Berry Plastics-Squeeze & turn jigger-Lite-touch; Weatherchem-Top Squeeze; Kerr-Tab II Squeeze & Turn; Rieke FS633, HZ43CR, HZ24CR; US Can-Screw top; Squeeze Lok Low Profile, FG; Rieke Corporation Stolz HZ32CR; Val-Pak Products, 63-400 Squeeze Cap; Berry Plastics Corporation DOT Series DCR; Berry Plastics Corporation DOT Series DCR-TI; Berry Plastics Corporation Drain Back System; Berry Plastics Corporation Jigger; Berry Plastics Corporation Quarter-Turn; Berry Plastics Corporation Snap-Lok II; Berry Plastics Corporation Squeeze and Turn; Berry Plastics Corporation SQL; Berry Plastics Corporation Tab II; Pollen, Double Squeeze |
| C | Random squeeze while turning; no orientation of the squeeze force is necessary | |
| D | Holding a fitment while turning; two-handed operation is normally required | Thomas Closure Moldcraft; M & M Industries, Inc.-Life Latch; Berry Plastics Corporation Lite-Touch Research and Devices; Ben King Associates Baby Safe; Tredegar |
| E | Key or device required to open | |
| F | Random lift while turning; no orientation of the lift force is necessary | |
| G | Localized lift of cap skirt or tab on closure while turning | Charles A. Breskin; Alcoa Tot Gard II |
| H | Localized push down while turning; force must be applied to a designated place on the top of the closure | Mack Wayne Plastics; Anchor Hocking Mold Craft; Rexam Healthcare |
| I | Set combination before turning | None at this time |
| J | Pull tab then turn | Intermova Gate Lok, Lefty Lok |
| K | Align arrows, then push tab down, then turn | |
| L | Turn closure until stops, then lift and continue trying to open | Berry Plastics Corp.-pail; Berry Plastics Corporation ZH05SQ; Berry Plastics Corporation T05SCR(B) & L05SCR; Berry Plastics Corporation ZH05SQ; Berry Plastics Corporation ZH50SQ Bway Corporation Screw Top |
| M | Localized push in while turning, force must be applied to designated place on closure | |
| N | Localized push back lever while turning, force must be applied to designated place on closure | None at this time |
| O | Turn the top cap until stops, then push down and turn | M & M Industries, Inc |
| TYPE II RECLOSABLE PACKAGING—LUG FINISH CLOSURE | | |
| A | Random push down while turning | Eyelet Specialty; Pac-Tec Inc.-Palm-N-Turn; Rexam Healthcare Screw Loc; Kerr CR-V; Berry Plastics Corporation Friendly and Safe; Thornton Plastics Tot-Lok; Child Related Research, Inc. Push-Palm; Design Consultant Plastics; Inventive Packaging Corp., Clarke Container Push & Turn; Cebal Americas (tube) & Rexam Healthcare (closure) TubeLok; Rexam Healthcare Purse Pak; Rexam Healthcare, Spring-Loc; Rexam Healthcare PursePak; Rexam Healthcare Tube-Loc |
| B | Hold fitment down while turning closure | Rexam Healthcare Snap-Lok, Econo-Lok; Rexam Healthcare-1-Clic; CannaContainers, CR Vial |
| C | Unlock outer ring to release lugs | Thornton Plastics |
| D | Depress fitment and slide to one side | Plastic box with sliding lug lock (manufacturer unknown); Creative Packaging Lok-Pak |
| E | Holding of fitment while turning; two-handed operation is normally required and no orientation of holding force is specified | None at this time |
| TYPE III RECLOSABLE PACKAGING—SNAP CLOSURE | | |
| A | (1) Align two points then push up on tab or lip | Bristol-Myers; Calmar Snap Safe; Stull; Plastic Research; Henlopen Snap Cap; Lermer CR Snap; Central States Can Co.; Boyle Midway; Clarke Container Snap Lok; VH Technologies-virtual hinge |
| | (2) Rotate then lift | Lutaloc LLC, Lutaloc; CannaContainers, CR J-Tube |
| B | Localized downward pressure to open | Continental Carlisle Co. Unikon; Magenta Corp.-Pillpack |
| C | Downward pressure on top with simultaneous upward pull on edges | Polymold; Basic Products Poly Mold |
| D | (1) Press to release and then lift hinged tab (dispensing cap) | Versatile Ind. Products |
| | | Magenta Corp.; Lumilite PopLok; MeadWestvaco (MWV): Slatersville, LLC; PS 194 Toggloc, PS 211 Toggloc, PS 355 Toggloc. |

TABLE 1 *Continued*

| Description | Example |
|--|---|
| (2) Press to release, follow by lifting force on tab (removable cap) (3) Push up to release (4) Push in or up, or both, to release (5) Pull to release and lift hinged lid (dispensing cap) (6) Push in and flip up (7) Push in and up then flip up | Wheaton Industries Ryles Closure; Magenta Corp. Pop-Lok Plug Stull Easy Flip 2008 captive hinge; Stull Technologies, Pry Open Closure Shellvick Industries, Inc. Stull Technologies: StullSURE CSP Technologies, ACTIV-VIAL; Ropak Packaging EZ STOR® (UC2G) CSP Technologies, Mini Cooper Vial |
| E (1) Squeeze and lift two specific points simultaneously (2) Squeeze and lift one specific point simultaneously (3) Squeeze two points simultaneously to open | Pennwalt-Lye; J. L. Clark; Rexam Healthcare Flip-Lok; Berry Plastics Corporation Series CR FlipLok Berry Plastics Corp.; FCR 19000, FCR 19100, FCR 19500; Philips Rx Packaging LLC, Rx Squeeze Vial; LA Packaging, SqueezeTops Pharmacy Vial |
| F Squeeze two specific points simultaneously to unlock sides, then squeeze specific point on third side while lifting lid | Shaw-Clayton Press N Pop; Norman J. Larus |
| G Requires key device or fingernail or coin or other tool to open | Skilcraft; Continental Plastics Med Guard; Plastic Container Corp. Prex Con; Polytop Corp. LokTop; Myco Corp. Surelock, Vicap; Rexam Healthcare Snap Cap; Pin Lock, Inc. Pin Lock; Kerr Glass Pry Off; Genpak Corp. Pry Off; Cin-Made Corporation (container) CMI (closure) Tec Loc; Continental Fibre Drum Leverpak; Berry Plastics; Plastics, Inc. Lever/Toggle Band on Pail; Container Products Inc. Lever Lok; Cin Made Corp. Friction Fit Plug; Silgan Plastics Corporation 28MM-410 CR Dispensing Nozzle Closure; ; Berry Plastics Corp. T02CR, L02S, T16CR(B) and L16CR, MeadWestvaco (MWV): Slatersville, LLC; PS 186 Loctop. |
| H Lift locking tab then push up | Internova Corp. Flap Lok |
| I Random squeeze while turning and pulling up | Stull Snap On/Twist Off |
| J Align two points, push down outer ring, then push up tab or lip | Robert Linkletter Associates |
| K Rotate cap to a first index, then counterrotate cap to a second index, then lift cap | Yellowstone Environmental Science, Inc. WiseCap |
| TYPE IV UNIT NON-RECLOSABLE PACKAGING—FLEXIBLE (STRIP/POUCH) | |
| A Internal (hidden) tear notch | Sharp; Reynolds Aluminum (Safety Pak 101); PCM Corp.; Cardinal Health; West Pharma-Services; Reed-Lane, Inc. |
| B Oriented tear | Schering Corp.; Sharp; American National Can Co.; Reed-Lane, Inc. |
| C Requires tool | Hargo Flexible Packaging (Pos-I-Pak); Sharp; Hach Chemical Co.; American National Can Co.; Cardinal Health; Paco; Reed-Lane, Inc.; Pactech Packaging LLC |
| TYPE V UNIT NON-RECLOSABLE PACKAGING—RIGID | |
| A Requires tool | All metal can |
| B Requires localized force | None at this time |
| C Peelable backing or coating Package is not opened or activated to expose contents: (1) One piece plastic unit with multiple holes to allow use of product without human contact; and (2) Two piece plastic unit with multiple holes to allow use of product without human contact | Standard packaging |
| D Push down while turning – closure is not removed; contents are exposed through hole in closure tip. | Neopac Twist 'n' Use (on tube) |
| TYPE VI UNIT RECLOSABLE PACKAGE | |
| A Metered device | None at this time |
| TYPE VII AEROSOL PACKAGES | |
| A Localized squeeze while lifting removes overcap (actuates normally) | Knight Engineering; Berry Plastics; Cobra Plastics Inc. 65 mm NICR; Berry Plastics Corporation 202SP & 211SP; Berry Plastics Corporation 211NSR; Berry Plastics Corporation 211SRC |
| B Hold fitment still while turning (actuates normally) | Thomas Closure |
| C Hold fitment still while lifting (actuates normally) | None at this time |
| D Requires use of a key or device to open (actuates normally) | Newman Green, Shellvick Answer Cup 200 TR/CR |
| E Directional overcap-actuator must be oriented, then pressed | |
| F Directional overcap-actuator requires sequential simultaneous pushing of locking device and actuator | Union Carbide; Seaquist; Rexam Healthcare CR Aerosol |
| G Directional overcap-actuator which requires a finger longer than that of a child | Shell Chemical |
| H Press to release, lift hinged tab at center of the closure followed by an upward force on the tab to remove overcap (actuates normally) | None at this time |
| I Directional overcap-actuator that requires the lifting of a hinged tab to reveal the actuator | None at this time |
| J Random push down while turning; no orientation of the downward force is necessary | ITL (Hayes-Albion) |
| K Localized press down then pull up at arrow | Berry Plastics Corporation 211RCR |
| L Localized push up to remove | Berry Plastics Corporation 211DCP; Berry Plastics Corporation 300RCR |
| M Line-up arrows on the overcap and ring to remove | Magenta Corporation (design by Innopak) Airsafe; Pierson Industries Inc. (Contact Technimark Associates) Hold Collar Line up Arrows Safety Closure, Universally Adaptable Safety Closure |
| TYPE VIII NON-RECLOSABLE PACKAGING—SEMI-RIGID (BLISTER) | |
| A Remove a portion (1) Remove portion (tab) and peel back (2) Remove portion (tab), peel back, and push out | Sharp; Meril Ltd., Child-Resistant Blister Pack Sharp |

TABLE 1 *Continued*

| | Description | Example |
|--|---|---|
| | (3) Remove portion (tab) and push out | MeadWestvaco (MWV): Healthcare Packaging PerfPak; Howell Packaging, Howel-CR-III; |
| | (4) Remove portion (tab), rotate the blister to orient, push through | Colbert, PharmaDial |
| | (5) Push to expose tab, peel back tab, push out | Keystone Folding Box Co., Key-Pak F1; Sharp Corporation AdvantagePak |
| | (6) Zipper card-pull back card strip behind tablet and push out | Sharp Ivers-Lee |
| B | Peel | |
| | (1) Peel back | Sharp; Constantia Hueck Folien |
| | (2) Peel back and push out | Sharp; Proclinical, Pick and Peel; Constantia Hueck Folien |
| C | Bend | |
| | (1) Center bend | Sharp |
| | (2) Bend, peel off, peel back, and push out | Sharp |
| | (3) Bend, peel back, push out | Intini Marketing, Bend & Peel Blister Pack, Bend & Peel (Easy Tab) Blister Pack; Faubel Pharma Services Corp. CRSF Blister Pack |
| | (4) Fold-tear-push out | Alcan Packaging, Generation I |
| | (5) Fold-tear-slide-push out | Alcan Packaging, Generation I |
| D | Internal Notch | |
| | (1) Internal tear (hidden) notch | Sharp; Cardinal Health, E-Z tear |
| | (2) Internal tear notch (visible) | Sharp Ivers-Lee |
| E | Push Out | |
| | (1) Push out | Sharp; Cardinal Health RxBarrier Pack |
| | (2) Press-in and push-out | MeadWestvaco (MWV): Calmar Home & Garden Packaging SBU, PIPO Pack |
| | (3) Push-pull-push out | Alcan Packaging, Generation II |
| F | Requires Tool | |
| | (1) Requires tool | Sharp |
| A | | |
| TYPE IX DISPENSERS (NOT INTENDED TO BE REMOVED)^B | | |
| A | Finger pump | |
| | (1) Directional pump must be oriented (by rotation to a second stop position) then pumped with finger | |
| | (2) Push tab while rotating directional pump to spray position, then pump with finger | Packaging Concepts Association, LLC CR Mpak; Packaging Concepts Assoc., LLC, Snap-on Dispensing System |
| | (3) Line-up arrows on the overcap and ring to remove | Duerr (design by Innopak), Airstafe |
| B | Trigger pump | |
| | (1) Press down on a point to release lock, rotate orifice to spraying position, and squeeze trigger | Continental AFA Dispensing Co., 0176 CR; MeadWestvaco (MWV): Calmar Home & Garden Packaging SBU Calmar, Mixor HP; Guala Dispensing S.p.A., TS3 CRP Screw and Snap-on Versions; Spray Plast S.P.A. Vela CR, SP05CR; MeadWestvaco (MWV): Vicenza S.p.A. SP05 CR; MeadWestvaco (MWV): Vicenza S.p.A. Vela CR |
| | (2) Press in and up on orifice (lock cover) and squeeze trigger | AFA Corp. |
| | (3) Push down on a point and slide it back to release lock, then rotate the orifice to the spraying position, and squeeze trigger | |
| | (4) Press in and pull down to release lock and squeeze trigger | Guala Dispensing S.p.A., TS1 CRP |
| | (5) Lift the tab up, rotate the orifice to spraying position and squeeze trigger | Afa Dispensing Group OpUs™ SOWa, OpUs™SONa, OpUs™SOS, OpUs™ FOnv, , OpUs™ FOvna, OpUs™ FOvwa, and OpUs™ FOvi |
| C | Line up arrows, squeeze and turn dispensing unit where the dispensing cap is permanently attached to the bottle | Van Blarcom |
| D | Line up arrows, and pull apart to open dispensing slot of a permanently attached two-piece unit. When the arrows are aligned, the two halves can be pulled apart to reveal a slot just large enough to dispense one tablet or capsule. | Magenta |
| E | Combination lock, turning counterclockwise until it stops, then turning clockwise until arrow 1 on the closure aligns with the arrow on the bottle, and finally turning counterclockwise until arrow 2 on the closure aligns with the arrow on the bottle | Toren Consulting Pty. Ltd. CR Tablet Dispensing Pack with 2 Line-Up Arrows on Cap |
| F | Localized push to release lock while pushing in slider to reveal a compartment large enough to dispense one tablet | Intini Marketing Inc., Medi-Lock Slider Pack |
| G | Hose end sprayers | |
| | (1) Push tab down, rotate valve counterclockwise to the on position to dispense | MeadWestvaco (MWV): Calmar Home & Garden Packaging SBU, Infinity HE |
| | (2) Push tab right, rotate valve clockwise (holding nozzle away and hose toward body) | Green Garden Products, K-1 |
| TYPE X BOX OR TRAY PACKAGE | | |
| A | Squeeze and slide to open | Tredegar, Kerr, CR Pill Box |
| B | Combination lock, multi-toggle, press down combination and slide or lift to open | Lederle, Magenta Corp.-Safety Box |
| C | An asymmetrical neck bottle that uses a squeeze and slide cap | |
| D | Localized squeeze while lifting up, then pressing two tabs while lifting lid to open | Intini Marketing Medi-Lock; Intini Marketing Inc., Medi-Lock Clamshell |
| E | Insert Key to Unlock, Slide-out, Push-out | Nosco Key.In |
| F | While Squeezing two points, push out. | SunGrown, Slide Box |
| TYPE XI RECLOSABLE PACKAGING—FLEXIBLE | | |
| A | Squeeze two specific points simultaneously, lift zipper tab and pull to open | Pactech Packaging LLC; MEDI-CRREO |
| B | Continuously threaded closure random squeeze while turning, No orientation of squeeze force is necessary | Pactech Packaging LLC |

TABLE 1 *Continued*

| | Description | Example |
|---|---|--|
| C | Squeeze two specific points simultaneously and Slide | Quark, Stink-Sack Secure |
| D | Scissors to open | Cannaline |
| E | Align, Push, Slide | Reynolds Presto Products, Child-Guard; FunkSac LLC, FunkGuard |
| TYPE XII DISPENSER (MAY BE REMOVED) | | |
| A | Trigger handle fits into an opening on a package, trigger handle is rotated 90 degrees to lock into place, a second device is attached to the trigger via a continuously threaded opening, then squeeze trigger | |
| TYPE XIII RECLOSABLE PACKAGING—SEMI-RIGID (BLISTER) | | |
| A | Press hold, pull out (parts remain together), push out | MeadWestvaco (MWV): Healthcare Packaging, Dosepak; Shellpak and Shellpak Renew; StarterPak; Dosepak Express; Keystone Folding Box Co. – EcoslideRx, Colbert Packaging Corporation - MedLock™ |
| B | Pull trigger, lift flap, push out | MeadWestvaco (MWV): Healthcare Packaging Surepak, Full Format Surepak |
| C | Unlock, unfold, and push out | Toren Consulting Pty. Ltd. CR Folding Blister Pack |
| D | Slide blisters to align with holes in bottom of case, push out, blisters then non-align | Cardinal Health Slide Pack; Magenta Corporation (design by Valley Design, Inc.) Push Safe |
| E | Press then flex and lift to open | Rondo, TopPak |
| F | Push in, squeeze and hold, hold and pull | Stora Enso, PharmaPak SHR |
| G | Push in on two points, pull out to open | Ecobliss, US Locked4Kids |

^A There are other laminations which could also function as described. These materials are examples:

| | |
|--|-----------------------------------|
| <i>Contract Packagers/General Packaging:</i> | <i>Foil Lamination Suppliers:</i> |
| Paco | Alusuisse |
| Sharp Corp. | M&N |
| Packaging Coordinators, Inc. | American National Can Co. |
| Comar | Constantia Hueck Folien |
| Reynolds | Alcan |
| Alcoa | Winpak Packaging |
| Ivers-Lee | |
| PCM Corp. | |
| Print Pak | |
| Endo Laboratories, Inc. | |
| Alcan Packaging—Contract Packaging Division | |

^B Mechanical dispenser in the current context refers to unit that possesses a plunger or lever for activation. Other dispensers of the squeeze-bottle type (for example, Polytop, CCC, Stull) are listed in accordance with the type of closure they possess.

5. Keywords

5.1 child-resistant; child-resistant packaging

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