Designation: D3475 – 17

Standard Classification of Child-Resistant Packages[1]

This standard is issued under the fixed designation D3475; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

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.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

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 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

[1] This classification is under the jurisdiction of ASTM Committee F02 on Primary Barrier Packaging and is the direct responsibility of Subcommittee F02.50 on Package Design and Development.

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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.

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; Berry Plastics Corp. 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; Berry Plastics Corp. F.G. (Final Generation), Carow-Turnloc; Comar-Secure Cap; Reike-FS652; CCL Container Corporaton (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; Berry Plastics Corp. 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
E	Key or device required to open	Research and Devices; Ben King Associates Baby Safe; Tredegar
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; Berry Plastics Corp.
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
M	Localized push in while turning, force must be applied to designated place on closure	Bway Corporation Screw Top
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; Berry Plastics Corp. 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) & Berry Plastics Corp. (closure) TubeLok; Berry Plastics Corp. Purse Pak; Berry Plastics Corp., Spring-Loc; Berry Plastics Corp. PursePak; Berry Plastics Corp. Tube-Loc
B	Hold fitment down while turning closure	Berry Plastics Corp. Snap-Lok, Econo-Lok; Berry Plastics Corp.-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 Lutaloc LLC, Lutaloc; CannaContainers, CR J-Tube
	(*2*) Rotate then lift	Continental Carlisle Co. Unikon; Magenta Corp.-Pillpack
B	Localized downward pressure to open	Polymold; Basic Products Poly Mold

TABLE 1 *Continued*

	Description	Example
C	Downward pressure on top with simultaneous upward pull on edges	Versatile Ind. Products
D	(*1*) Press to release and then lift hinged tab (dispensing cap)	Magenta Corp.; Lumlite PopLok; MeadWestvaco (MWV): Slatersville, LLC; PS 194 Toggloc, PS 211 Toggloc, PS 355 Toggloc.
	(*2*) Press to release, follow by lifting force on tab (removable cap)	Wheaton Industries Ryles Closure; Magenta Corp. Pop-Lok Plug
	(*3*) Push up to release	Stull Easy Flip 2008 captive hinge; Stull Technologies, Pry Open Closure
	(*4*) Push in or up, or both, to release	Shellvick Industries, Inc.
	(*5*) Pull to release and lift hinged lid (dispensing cap)	Stull Technologies: StullSURE
	(*6*) Push in and flip up	CSP Technologies, ACTIV-VIAL; Ropak Packaging EZ STOR® (UC2G)
	(*7*) Push in and up then flip up	CSP Technologies, Mini Cooper Vial
E	(*1*) Squeeze and lift two specific points simultaneously	Pennwalt-Lye; J. L. Clark; Berry Plastics Corp. Flip-Lok; Berry Plastics Corporation Series CR FlipLok
	(*2*) Squeeze and lift one specific point simultaneously	
	(*3*) Squeeze two points simultaneously to open	Berry Plastics Corp.; FTCR 19000, FTCR 19100, FTCR 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; Berry Plastics Corp. 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; Plastican, 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; Cannaline
	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	Standard packaging
	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	
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; Berry Plastics Corp. 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	

TABLE 1 *Continued*

	Description	Example
	(*1*) Remove portion (tab) and peel back	Sharp; Merial Ltd., Child-Resistant Blister Pack
	(*2*) Remove portion (tab), peel back, and push out	Sharp
	(*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), Airsafe
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
G	Press in four tabs and flip top up	SunGrown, Flip Top Box

TABLE 1 *Continued*

	Description	Example
	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
C	Squeeze two specific points simultaneously and Slide	Quark, Stink-Sack Secure
D	Scissors to open	None at this time
E	Align, Push, Slide	Reynolds Presto Products, Child-Guard; FunkSac LLC, FunkGuard; Sierra Packaging and Converting, LLC, Child-Resistant Exit Bag
	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:

Contract Packagers/General Packaging:	*Foil Lamination Suppliers:*
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