



AMCO/MCB Working Group

Meeting # 4

01/07/22

Presentation Topics

- Common Goals
- Regulatory Considerations
- Child Resistant Packaging
- Dose / Serving Measuring Devices
- Catalog of Selected / Approved Packaging
- Bulk Combined Orders Concept
- Eco-Friendly Packaging & Recycling

Common Goals

- Promote and advocate for a vibrant and reasonably regulated Alaska-based cannabis industry
- Eliminate the stigma surrounding marijuana through exemplary business practices
- Reduce operating costs for Alaska marijuana licensees to enable their success

Regulatory Considerations

- No need to re-invent the wheel: **Federal regulations** already address packaging & labeling for food, drugs, and consumer products. Alaska can adopt key points from those regs.
- If any changes are made to the regulations, there must be a **grace period**, allowing licensees to use-up existing inventories of affected packaging & labeling.
- We may not agree with everything other states have done, but we can **benchmark** against them as a reference point to create our own **best practices**.

Relevant Rules & Regulations

Level	Area	Regulations	Adopted & Enforced in Alaska by . . .
State	Marijuana	AS 17.38 Statutes – The Regulation of Marijuana 3 AAC 306 Regulations for the Marijuana Control Board	SOA AMCO (Alcohol & Marijuana Control Office)
Federal	Consumer Products	NIST Handbook 130 – Chapter IV. A. Uniform Packaging and Labeling Regulations	SOA Dept. of Weights & Measures
Federal	Food & Drugs	CFR Title 21 – Food and Drugs, Part 101 FDA Food Labeling Guide	SOA Dept. of Environmental Conservation
Federal	Child Resistance	ASTM D3475-17 Standard Classification of Child-Resistant Packages CFR Title 16, Part 1700 – Poison Prevention Packaging	SOA AMCO (Alcohol & Marijuana Control Office) CPSC (Consumer Product Safety Commission)

Declarations: Identity, Quantity, Responsibility . . . Nutrition Facts, Ingredients, Sub-Ingredients, Allergens, Expiration Date

Child Resistant Packaging

CFR (Code of Federal Regulations) Title 16, Part 1700

- Requirements under the Poison Prevention Act
- Child Resistant Packaging
 - Significantly **difficult** for **children under five years** of age to open or obtain a harmful amount of the contents within a reasonable time.
 - Must also **not be difficult** for normal **adults** to use properly.
- Compliance Test Summary
 - For a package to be child resistant, a total of **80%** of the children tested according to the procedure **must not open the package** during a full **10 minutes** of testing.
 - To make sure that adults are able to use a child-resistant package properly, **90% of adults** tested have up to **five minutes**, and then another minute in a second test, to **open and close the package** so that it is child resistant again if specified.

Child Resistant Packaging

SOA Requirements

- Child Resistant
- Opaque
- Re-sealable

These bags meet SOA Requirements, as long As they are:

1. Opaque* on both sides & heat sealed, or
2. Heat sealed & placed in an outer opaque bag, or
3. They have resealable To CR zipper and opaque or placed in opaque bag.



CR & Non-CR Zippers

These bags & vials are Re-sealable to Child Resistant condition.

Locking
Zipper
Mechanism



Locking Exit Bags



Pop-Top Vials



PD&T Vials

* NOTE: On December 5, 2021, 3 AAC 306.345 was amended to allow for the exit package to be provided by means of it being the consumer's own opaque bag.

ASTM D3475-09 Standard

Classification of Child-Resistant Packages

- ASTM Type I **Reclosable** Packaging Continuous Thread Closure
- ASTM Type II **Reclosable** Packaging Lug Finish Closure
- ASTM Type III **Reclosable** Packaging Snap Closure
- ASTM Type IV Unit **Non-Reclosable** Packaging Flexible (Strip/Pouch)
- ASTM Type VII **Aerosol** Packages
- ASTM Type VIII **Non-Reclosable** Packaging Semi Rigid (Blister)
- ASTM Type IX Dispensers (Not Intended To Be Removed)
- ASTM Type X Box Or Tray Package
- ASTM Type XI **Reclosable** Packaging Flexible
- ASTM Type XIII **Reclosable** Packaging Semi Rigid (Blister)

More information available from CPSC (Consumer Product Safety Commission):

<https://www.cpsc.gov/Regulations-Laws--Standards/Statutes/Poison-Prevention-Packaging-Act/CRP-ASTM-Type>

<https://www.cpsc.gov/Regulations-Laws--Standards/Statutes/Poison-Prevention-Packaging-Act/Child-Resistant-and-Senior-Friendly-Packaging-guide>

Push Down & Turn, Squeeze While Turning, Squeeze-to-Open, Align Two Points, Unlock Outer Ring to Release Lugs, Depress Fitment & Slide to One Side, etc.

Child Resistant Packaging

The table below is borrowed from the Oregon “Packaging and Labeling Guide”. It illustrates the policy the OLCC has adopted for Child-Resistant Packaging.

Type of Packaging Required	Re-sealable & Child-Resistant throughout Life of the Product	Single-Use Child-Resistant	Child-Resistant Packaging Not Required
Type of Marijuana Item Sold	<ul style="list-style-type: none">• Edibles• Topicals• Tinctures and Capsules• Concentrates• Extracts• Transdermal Patches and Suppositories• Cannabinoid Products	<ul style="list-style-type: none">• Usable Marijuana	<ul style="list-style-type: none">• Immature Plants• Seeds

NOTE: Products may be packaged directly into containers that are OLCC approved and certified child-resistant or the packaged product may be placed into an approved exit package at the point of sale.

Tamper Evident Packaging

CFR Title 21 Chapter I Subchapter C Part 211 Subpart G

§ 211.132 Tamper-evident packaging requirements for over-the-counter (OTC) human drug products

- A tamper-evident package is one having one or more **indicators or barriers** to entry which, if breached or missing, can reasonably be expected to provide **visible evidence** to consumers that tampering has occurred.
- To reduce the likelihood of successful tampering and to increase the likelihood that consumers will discover if a product has been tampered with, the package is required to be **distinctive** by design or by the use of one or more **indicators or barriers** to entry that employ an **identifying characteristic** (e.g., a pattern, name, registered trademark, logo, or picture).

Tamper Evident Packaging

T-EV Cap Seals



Evidence: Seal is broken or missing

T-EV Snap Ring Caps



Evidence: Ring is detached from cap

T-EV Shrink Bands



Evidence: Shrink band is broken or missing

T-EV Tape



Evidence: "Void/Open" message exposed

NOTE: Some tamper evident packaging may also qualify as "child resistant" through the testing & certification process.

SOA Required Product Packaging (Edibles)

3 AAC 306.565 (a) & (b)

Potency limits in packaging each edible marijuana product for resale by a retail marijuana store.

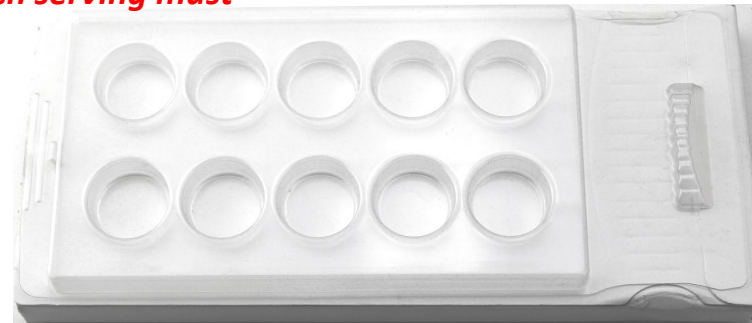
10mg/serving, 10 servings/pkg. (100mg/pkg.) - active THC or Delta 9

The reported content must be within 20 percent of the manufacturer's target; for example, in a 25 milligrams total THC package with five servings, each serving must contain between four and six milligrams of THC.

(See: 3 AAC 306.560)



Multiple Servings: Product itself must have markings or demarcations clearly delineating each serving of the product. For liquid marijuana products with multiple servings the packaging must indicate the number and size of individual servings.



Protect the product from contamination and not impart any toxic or damaging substance to the product.

Package must indicate:

- mg THC/serving
- servings/package
- mg THC/package (+/-20%)

No images or cartoons specifically targeting individuals under 21.

Dose / Serving Measuring Devices



External dosing cups with graduated marking



Graduated raised markings on bottles



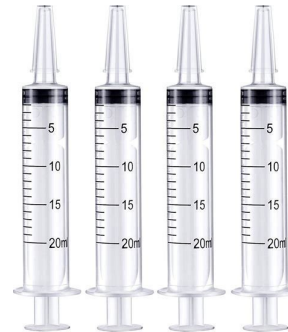
Dosing cup integrated with bottle cap



Graduated dose markings
Printed on bottle or label



Graduated cylinders



Dosing Syringes



Dropper bottles with graduated markings on dropper stem

Child Resistant Packaging for Drinkables



Push Down & Turn CR Caps



8 fl.oz. (237G)

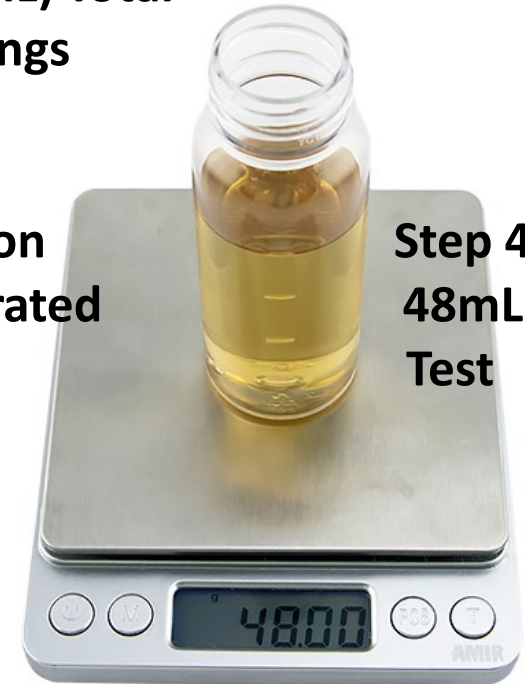


2fl.oz. (60mL)



**Serving marks embossed on bottle.
2fl.oz. (60mL) Total
12mL Servings**

**Accuracy
Confirmation
using calibrated
scale.**



**Step 4:
48mL
Test**

THC Limits

- **3 AAC 306.355. Limit on quantity sold**

A retail marijuana store may not sell to any one person per day

- (1) more than one (1) ounce of usable marijuana;
- (2) more than seven (7) grams of marijuana concentrate for inhalation; or
- (3) more than 5,600 milligrams of THC in combined sales of marijuana and marijuana products.

- **3 AAC 306.370. Onsite consumption endorsement for retail marijuana stores**

For consumption at the time of purchase . . .

- (1) Maximum of one (1) gram marijuana bud or flower,
- (2) edible marijuana products in quantities not to exceed 25 milligrams of THC to any one person per day;
- and
- (3) a vaping device that contains not more than 0.3 grams of marijuana concentrate to any one person per day

THC Limits

- **Edibles (for oral consumption) - 3 AAC 306.560. Potency limits per serving and transaction for edible marijuana products**
 - 10mg THC per serving; 100mg THC per package (*statewide if not superseded by local jurisdiction ordinances*)
 - 5mg THC per serving; 50mg THC per package (*limits set by certain local jurisdiction ordinances*)
 - Maximum allowable THC amounts are also limited by 3 AAC 306.355 and 3 AAC 306.370.
- **Non-Edible Concentrates (for Inhalation)**
 - Maximum allowable THC amounts are limited by 3 AAC 306.355 and 3 AAC 306.370. ($\leq 5600\text{mg}$)
- **Non-Edible Concentrates (for Topical Application)**
 - Maximum allowable THC amounts are limited by 3 AAC 306.355 and 3 AAC 306.370. ($\leq 5600\text{mg}$)

Drinkables “Small Bottle” Examples

Ref.	Product Type, Intended Use	Package Characteristics	Package Size fl.oz. (mL)	Total THC (per Pkg.)	Serving Qty.	THC per Serving (mg)	THC % Conc.
A	Beverage	Serving demarcations indicated on label	2 fl oz (60mL)	50mg	10	5mg	0.083%
B	Liquid Drink Additive	Bottle, Total 10mg THC	2 fl oz (60mL)	10mg	2	5mg	0.017%
C	Tincture/Syrup/ Elixir	dropper bottle	2 fl oz (60mL)	50mg	5	10mg	0.083%
D	Syrup	Demarcations on bottle	1 fl oz (30mL)	25mg	5	5mg	0.083%
E	Liquid Creamer to add to coffee or tea	Glass jar with demarcations on label	2 fl oz (60mL)	10mg	10	1mg	0.017%
F	Breath Spray	Aerosol spray bottle	0.067 fl oz (2mL)	100mg	30	10mg	5%
G	Fruit Beverage	Serving demarcations indicated on label	2 fl oz (60mL)	25mg	5	5mg	0.042%

Approximate Equivalents: 1mL=1000mg 1mL=1g 1fl.oz.=30mg 2fl.oz.=60mg

Catalog of Selected / Approved Packaging “The Oregon Model”

Following are a few useful links which provide an introduction to Oregon’s model for packaging & labeling of marijuana:

- **PACKAGING & LABELING EVALUATION**

<https://www.oregon.gov/olcc/marijuana/Documents/PackagingandLabeling.pdf>

- **PACKAGING AND LABELING GUIDE**

https://www.oregon.gov/olcc/marijuana/Documents/Packaging_Labeling/PackagingandLabelingGuide.pdf

- **APPROVED PACKAGING LIST (RESEALABLE, CONTINUALLY CHILD-RESISTANT PACKAGES)**

https://www.oregon.gov/olcc/marijuana/Documents/Packaging_Labeling/Approved_List_Resealable_CR.pdf

- **PACKAGING AND LABELING UPDATE (includes “SELL DOWN PERIOD”)**

https://www.oregon.gov/olcc/marijuana/Documents/Packaging_Labeling/Packaging_Labeling_Rule.pdf

- **PACKAGING FOR SALE TO CONSUMER**

https://secure.sos.state.or.us/oard/viewSingleRule.action;JSESSIONID_OARD=svwXlg2r6XaHn2dZRNZ6-gFLM2u9tzAX7jNeKjxxfXh_vs9SEVyz!2121836845?ruleVrsnRsn=285398

Bulk Combined Ordering Concept

Buying Group Members all buy packaging from Central Source

- Opportunities

- Lower Per-Unit Costs, could help protect licensees from impacts of nationwide legalization
- Uniformity, consistent quality, and assurance of regulatory compliance
- Reliable supply / availability of packaging & labeling materials

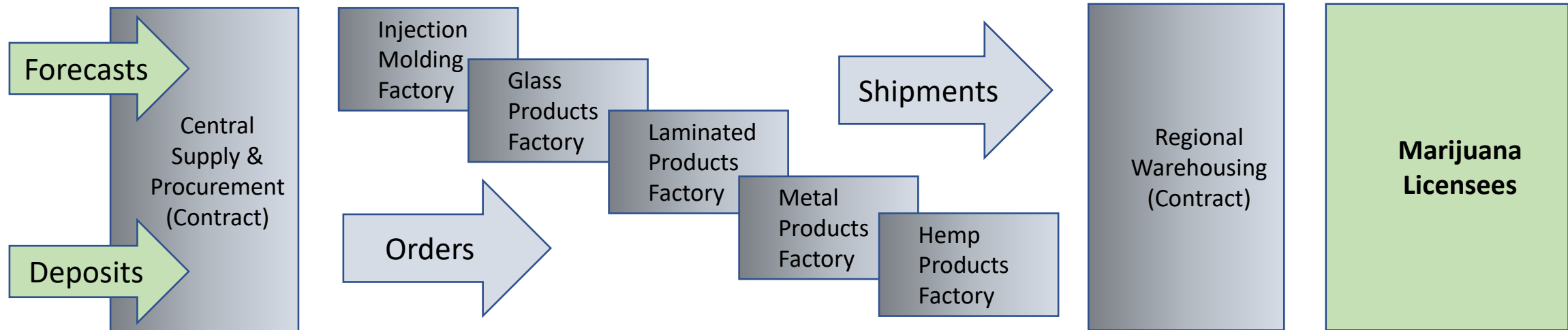
- Challenges

- Current issues with Global Supply Chain
- Cost of storage & warehousing goods until needed for “just-in-time” delivery
- Licensees are accustomed to working independently
- Licensees use unique packaging & labeling to differentiate their products in the marketplace
- Upfront costs and MOQs (Minimum Order Quantities)

Bulk Combined Ordering Concept

Volume Based Percentage Discount Concept

Item / Quantity	20,000	50,000	100,000	500,000
J-Tubes	A%	B%	C%	D%
Pop-Tops	E%	F%	G%	H%
Mylar Bags	I%	J%	K%	L%
Concentrate Jars	M%	N%	O%	P%
Hemp Boxes	Q%	R%	S%	T%
Tin Boxes	U%	V%	W%	X%
Glass Bottles	Z%	AA%	BB\$	CC%



Model to Accommodate Bulk Ordering

	Current	Phase 1	Phase 2	Phase 3
Territory	Alaska	Alaska	Alaska	Alaska
Market Segments	Marijuana Hemp/CBD	Marijuana Hemp/CBD	Marijuana Hemp/CBD	Marijuana Hemp/CBD
Factories	China Taiwan U.S.	China Taiwan U.S.	China Taiwan U.S.	China Taiwan U.S.
Warehousing & Logistics	Anchorage	Anchorage TBD	Anchorage TBD TBD	Anchorage TBD TBD TBD
Sales Offices	Anchorage	Anchorage	Anchorage TBD	Anchorage TBD TBD
Sourcing Office	Chang'an, Donguan, China	Chang'an, Donguan, China	Chang'an, Donguan, China	Chang'an, Donguan, China

Eco-Friendly Packaging



Glass J-Tubes



Glass Jars



Paper Boxes



Glass
Concentrate Jar































Tin Box with Sliding Lid



Bioplastic Boxes

Packaging Materials



	Recyclability	Cost	Biodegradability	Utility
Paper	  	\$ \$	  	 
Plastic		\$		  
Glass	 	\$ \$ \$	 	
Metal	  	\$ \$ \$		
Bioplastic	 *	\$ \$ \$	 	 

* *Bioplastics are currently difficult to recycle, but this will change over time.*

Paper Packaging



	Good	Better	Best
Type of Paper	Wood Pulp Based	Recycled Paper	Hemp Based
Environmental Impact	Cutting Trees, Operating Machines	Manufacturing & Energy Intensive	Not Cutting Trees, More Efficient Land Use
Renewable Cycle Duration	Decades (Trees)	Immediate / Weeks (Production Time)	3 to 4 Months (Hemp Plants)
Cost	\$	\$\$	\$\$\$

Biodegradable Products Institute

- Biodegradable Products Institute

<https://www.bpiworld.org/>



- Guidelines For The Labeling And Identification Of Compostable Products And Packaging

https://www.bpiworld.org/resources/Documents/BPI_Labeling-Guidelines-2020.pdf

- **Biodegradation** is the degradation of the materials into environmentally acceptable products such as water, carbon dioxide, and biomass by the action of naturally available microorganisms under normal environmental conditions.















Compostability & Biodegradability Standards

Certification	Standards (USA)
Industrial Compost	ASTM D6400 - Standard Specification for the Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities*
Landfill Biodegradation	ASTM D5526 - Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under Accelerated Landfill Conditions
Marine Biodegradation	ASTM D6691 - Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials in the Marine Environment by a Defined Microbial Consortium or Natural Sea Water Inoculum

* **NOTE: At present there is no industrial grade compost facility in Alaska. The Anchorage community compost facility does not currently accept compostable containers.**

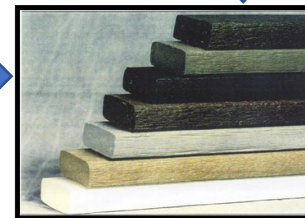
Plastic Ocean Waste Solutions, LLC

- Designed a mobile Plastic Ocean Waste Recycling solution deployed in two 40-foot containers and can be moved from community to community to convert plastic waste into construction products
- Initial system will produce Recycled Plastic Lumber from 2, 4, and 5 recyclates, future systems will focus on 1 and 6
- EPA funded for both the design (2021) and the demonstration (2022-2023)

 PETE	 HDPE	 PVC	 LDPE	 PP	 PS	 OTHER
polyethylene terephthalate	high-density polyethylene	polyvinyl chloride	low-density polyethylene	polypropylene	polystyrene	other plastics, including acrylic, polycarbonate, polyactic fibers, nylon, fiberglass
soft drink bottles, mineral water, fruit juice containers and cooking oil	milk jugs, cleaning agents, laundry detergents, bleaching agents, shampoo bottles, washing and shower soaps	trays for sweets, fruit, plastic packing (bubble foil) and food foils to wrap the foodstuff	crushed bottles, shopping bags, highly-resistant sacks and most of the wrappings	furniture, consumers, luggage, toys as well as bumpers, lining and external borders of the cars	toys, hard packing, refrigerator trays, cosmetic bags, costume jewellery, audio cassettes, CD cases, vending cups	an example of one type is a polycarbonate used for CD production and baby feeding bottles
						



PET Recycled Plastic Bricks



Recycled Plastic Lumber



Polystyrene Concrete Aggregate

Recycling Collection Centers

