



Maine Department of Environmental Protection
Attn: Brian Beneski
Supervisor, Recycling Programs
Division of Materials Management
Bureau of Remediation and Waste Management
17 State House Station
32 Blossom Lane
Augusta, Maine 04333-0017

Sent via email: MainePackagingEPR@maine.gov

From: Annie Lane, Chair, Pressurized Cylinder Industry Association

Date: November 13, 2023

RE: Feedback on Conceptual Draft Rules for Extended Producer Responsibility Program for Packaging

Thank you for the opportunity to provide feedback on the conceptual draft rules for Maine's Extended Producer Responsibility Program for Packaging.

The Pressurized Cylinder Industry Association (PCIA) was incorporated in June 2023 to represent the interests of the pressurized cylinder brands and producers, specifically to address extended producer responsibility legislation. PCIA is made up of leading brands supplying both refillable and non-refillable pressurized cylinders to US consumers, including Cascade Designs, Inc., The Coleman Company Inc., Johnson Outdoors Gear Inc., Manchester Tank, Worthington Industries, YSN Imports, and Zippo. PCIA is collaborating with additional impacted producers to implement a producer responsibility program for cylinders in Connecticut and is actively engaged with a number of other states, including Vermont, Oregon, and California, that are legislating similar programs.

Rather than providing in-depth comments we would like to focus on the following key concerns:

1. Inclusion of pressurized cylinders in broad packaging legislation
2. Regulatory Burden
3. Alternative Collection Systems

[Inclusion of Pressurized Cylinders in Packaging Legislation](#)

Both pressurized cylinders (refillable and non-refillable) require much different collection and processing systems than other types of residential packaging (e.g., beverage containers, soup cans, plastic film). In addition, refillable cylinders already have functioning commercial reuse models and exchange systems designed to address these considerations.

These different considerations are included in Table 1.



Table 1 – Considerations related to collection, transportation, and processing of pressurized cylinders

	Considerations
Collection	<ul style="list-style-type: none"> • Cylinders are typically physically segregated from other recyclables at depots or in special publicly accessible containers (e.g., collection bins at parks) • Municipalities typically do not allow residents to place cylinders in curbside collection systems (recycling or garbage)
Transportation	<ul style="list-style-type: none"> • Health and safety risks exist if cylinders are compacted in a collection vehicle • Additional training, placarding, and inspections are required for transportation of hazardous materials
Processing	<ul style="list-style-type: none"> • Cylinders pose health and safety risks to workers at material recovery facilities (MRF) particularly in the baling process • MRFs do not have equipment to properly process cylinders (e.g., remove the gas safely and prepare for recycling)
Overarching Impacts	<ul style="list-style-type: none"> • Unique permitting requirements or specifications for the collection, storage, transportation and processing of pressurized cylinders (e.g., Fire Marshall, Department of Transportation requirements) • Communications with the public become more complex and the public is more likely to be confused if cylinders are included in a broader packaging program. For example, handling requirements are different.

Given the unique considerations in handling pressurized cylinders, dedicated collection, transportation, and management systems are required. These systems are not compatible with systems for packaging of non-hazardous products.

Because of these considerations, pressurized cylinders are typically included in regulations focusing on packaging for hazardous or special products rather than in regulations for packaging of non-hazardous products. By way of example, no Canadian residential packaging regulation includes pressurized cylinders. Instead, jurisdictions like Ontario¹, Quebec², Manitoba³, Alberta⁴, and British Columbia⁵ include pressurized cylinders in a regulation for packaging for hazardous or special products. This approach allows the regulations

¹ Ontario Government. O. Reg 449/21 - Hazardous and Special Products, 2021. Available at <https://www.ontario.ca/laws/regulation/r21449>.

² Quebec Government. O.C.C 933-2022 – Recovery and reclamation of products by enterprises – Amendment. Available at <http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=1&file=105769.pdf>.

³ Manitoba Government. Household Hazardous Material and Prescribed Material Stewardship Regulation, 2010. Available at <https://web2.gov.mb.ca/laws/regs/annual/2010/016.pdf>.

⁴ Alberta Government. Extended Producer Responsibility (EPR) for Packaging, Paper Products, Single-Use Plastics, as well as Hazardous and Special Products, 2021. Available at <https://www.alberta.ca/circular-plastics-economy-engagement.aspx>.

⁵ British Columbia Government. Advancing Recycling in B.C.: Extended Producer Responsibility Five-Year Action Plan 2021-2026. Available at https://www2.gov.bc.ca/assets/gov/environment/waste-management/recycling/recycle/extended_producer_five_year_action_plan.pdf



to reflect the special circumstances described above for collection, transportation and management of pressurized cylinders and other types of packaging for hazardous or special products (e.g., management of residual contents).

A number of packaging laws in US States have excluded certain packaging for similar reasons (e.g., packaging related to drug prescriptions or pesticides/insecticides) but have not extended this rationale to pressurized cylinders. Similarly, including producers of cylinders which require dedicated collection, transportation, and management systems in the same producer responsibility organization (PRO) as producers of packaging for non-hazardous products that can be safely collected through commingled curbside collection adds administrative complexity and reduces the effectiveness and efficiency of both collection systems.

Finally, refillable pressurized cylinders require separate consideration from non-refillable cylinders due to the existence of current commercial solutions for reuse and exchange of these cylinders. For example, propane exchange systems already provide a robust reuse system, achieving high recovery and reuse rates relative to other packaging on the market. As a result, inclusion of refillable pressurized cylinders in producer responsibility legislation creates unnecessary regulatory burden for this category of cylinders.

As a result, we recommend Maine DEP include exemptions in subparagraph (13)(D) for both refillable and non-refillable pressurized cylinders.

Regulatory Burden

Many of the reporting requirements will add significant regulatory burden to our sector with few benefits and may not be applicable to pressurized cylinders. These include:

- Reduction - "...Relative to the first producer reporting, the total weight of packaging material reported by producers should be reduced by no less than 15 percent from 2030 to 2039, no less than 30 percent from 2040 to 2049, and no less than 50 percent from 2050, onward." The percentage of the investment must be at least equal to the difference between the percent reduction goal and the realized percent reduction as reported two calendar years prior. "
- Reuse – "The percent by weight of total packaging material reported by producers that is managed for reuse should be no less than 10 percent from 2030 to 2039, no less than 20 percent from 2040 to 2049, and no less than 30 percent from 2050, onward. If a goal is missed, beginning the following calendar year, and continuing every year in which the goal remains unmet, the Department will dedicate a percentage of investments to projects supporting reuse and refill."
- Postconsumer Recycled Content – "For each base material, the percent of the total weight of packaging material reported by producers that is postconsumer recycled material should be no less than 10 percent from 2030 to 2039, no less than 20 percent from 2040 to 2049, and no less than 30 percent from 2050, onward."
- Toxicity - "Toxics" means priority chemicals listed by the department in accordance with Toxic chemicals in children's products, 38 M.R.S. §§ 1691-1699B (2019); PFAS and phthalates as defined under Reduction of toxics in packaging, 32 M.R.S. §§ 1731-1738 (2019); and priority chemical listed by



the Department in accordance with Toxic chemicals in food packaging, 32 M.R.S. §§ 1741-1747 (2019); and proven precursors.

Pressurized cylinders are federally regulated by the Department of Transportation (DOT). Title 49 of the Code of Federal Regulations defines hazardous materials, outlines transportation requirements by hazardous material type, and dictates the design of the packaging (e.g., pressurized cylinder) containing the hazardous material, including the cylinder material, wall thickness and strength. An excerpt from the DOT regulation governing pressurized cylinders is provided below:

49 CFR 178.35 – 178.75 Subpart C: Specifications for Cylinders

This part prescribes the manufacturing and testing specifications for packaging and containers used for the transportation of hazardous materials in commerce.

Subpart C defines the materials allowed and minimum wall thickness depending on the cylinder specification.

Example requirements for steel type and minimum wall thickness are shown below for the DOT-4BA specification, which is commonly followed for refillable propane tanks.



Appendix A to Part 178 - Specifications for Steel

Table 1



[Open-hearth, basic oxygen, or electric steel of uniform quality. The following chemical composition limits are based on ladle analysis.]

Designation	Chemical composition, percent-ladle analysis		
	Grade 1 ¹	Grade 2 ^{1 2}	Grade 3 ^{2 4 5}
Carbon	0.10/0.20	0.24 maximum	0.22 maximum.
Manganese	1.10/1.60	0.50/1.00	1.25 maximum.
Phosphorus, maximum	0.04	0.04	0.045. ⁶
Sulfur, maximum	0.05	0.05	0.05.
Silicon	0.15/0.30	0.30 maximum	
Copper, maximum	0.40		
Columbium		0.01/0.04	
Heat treatment authorized	(³)	(³)	(³).
Maximum stress (p.s.i.)	35,000	35,000	35,000.

¹ Addition of other elements to obtain alloying effect is not authorized.

² Ferritic grain size 6 or finer according to ASTM E 112-96 (IBR, see § 171.7 of this subchapter).

³ Any suitable heat treatment in excess of 1,100 °F., except that liquid quenching is not permitted.

⁴ Other alloying elements may be added and shall be reported.

⁵ For compositions with a maximum carbon content of 0.15 percent of ladle analysis, the maximum limit for manganese on ladle analysis may be 1.40 percent.

⁶ Rephosphorized Grade 3 steels containing no more than 0.15 percent phosphorus are permitted if carbon content does not exceed 0.15 percent and manganese does not exceed 1 percent.



(f) **Wall thickness.** The minimum wall thickness of the cylinder must meet the following conditions:

- (1) For any cylinder with an outside diameter of greater than 6 inches, the minimum wall thickness is 0.078 inch. In any case, the minimum wall thickness must be such that the calculated wall stress at the minimum test pressure may not exceed the lesser value of any of the following:
 - (i) The value shown in table 1 of appendix A to this part, for the material under consideration;
 - (ii) One-half of the minimum tensile strength of the material determined as required in paragraph (j) of this section;
 - (iii) 35,000 psig; or
 - (iv) Further provided that wall stress for cylinders having copper brazed longitudinal seams may not exceed 95 percent of any of the above values. Measured wall thickness may not include galvanizing or other protective coating.

An excerpt is shown below for the steel type and minimum wall thickness requirements for the DOT-39 specification, which is commonly followed for non-refillable propane tanks.

(1) **Steel.**

(i) The steel analysis must conform to the following:

Expand Table		Ladle analysis	Check analysis
	Carbon, maximum percent	0.12	0.15
	Phosphorus, maximum percent	.04	.05
	Sulfur, maximum percent	.05	.06



(d) **Wall thickness.** The minimum wall thickness must be such that the wall stress at test pressure does not exceed the yield strength of the material of the finished cylinder wall. Calculations must be made by the following formulas:

(1) Calculation of the stress for cylinders must be made by the following formula:

$$S = [P(1.3D^2 + 0.4d^2)] / (D^2 - d^2)$$

Where:

S = Wall stress, in psi;
P = Test pressure in psig;
D = Outside diameter, in inches;
d = Inside diameter, in inches.

(2) Calculation of the stress for spheres must be made by the following formula:

$$S = PD / 4t$$

Where:

S = Wall stress, in psi;
P = Test pressure in psig;
D = Outside diameter, in inches;
t = Minimum wall thickness, in inches.

Given these rules, there is little to no opportunity to reduce the quantity of the packaging material (e.g., the steel thickness) in relation to the volume of product.

The use of refillable pressurized cylinders is common with well-established exchange systems for products like propane, oxygen, hydrogen, carbon dioxide as well as consumer-driven refill programs. Requiring additional reporting adds an unnecessary administrative burden that we do not support. In many cases, reporting on reuse can be difficult as the refill is done by an entity that may not be the producer (e.g., retailer or another distributor).

Cylinders are also made from steel or other metals that are highly recyclable. Steel and aluminum scrap markets are well established and scrap metal is typically less expensive than virgin. As a result, steel mills tend to maximize the use of both pre- and post-consumer steel. For further increases in environmental performance, many industries that consume steel (e.g., automotive, construction, etc.) are looking to reduce their emission reduction targets through collaboration with the steel industry. Thus, it is unlikely that companies that use metal packaging will have any significant influence on or access to the low carbon steel market given the low demand compared to other sectors. While requirement related to recycled content may be helpful for other materials, for metal packaging it will likely only add administrative burden.

Finally, it is not clear what types of assessments Maine DEP is looking for from gas cylinder companies to test the metal used in their packaging for toxicity. It would be helpful for the sector to understand what tests may be needed in order to assess the potential costs to the industry.

Alternative Collection Systems

While the idea for the alternative collection system is helpful, PCIA has substantial concerns with how it is established in the proposed rules. The combined administrative cost of running an alternative collection system, paying compliance related costs, and reporting into the government-run program seems excessively



high, especially when considering that a producer may be running its own functional exchange / reuse system. These fees will not improve the functioning of either system but instead adds new costs. PCIA recommends all requirements be removed for reuse/exchange systems as indicated above.

Finally, even if producers for a material category set up a more robust and effective collection system than Maine's packaging program, those producers must also pay fees into the packaging program for any materials not collected in the alternative program. This requirement will result in a higher overall burden on those producers. In other words, it discourages any innovation to develop new and separate collection solutions. PCIA recommends that alternative collection systems not be required to pay into the common collection system, especially where materials are managed outside of the comingled system and similar levels of accessibility are provided.

Again we appreciate the opportunity to provide comments and would be pleased to discuss any questions you might have.

Sincerely,

A handwritten signature in black ink that reads "Annie Lane".

Annie Lane, Chair
Pressurized Cylinder Industry Association
E: Annie.Lane@worthingtonindustries.com
T: 614-840-4012