



# **Welcome to the RPPC Webinar**



# **California's Rigid Plastic Packaging Container (RPPC) Program**

# Webinar Agenda

1. RPPC Definition
2. “What is an RPPC” demo
3. “Container Volume Measurement” demo
4. RPPC Regulations

# California's Rigid Plastic Packaging Container (RPPC) Program

- Enacted in 1991.
- The revised regulations and went into effect in January, 2013.
- To increase the use of recycled postconsumer plastic.
- The focus is on product manufacturers that sell or offer for sale products held in RPPCs.

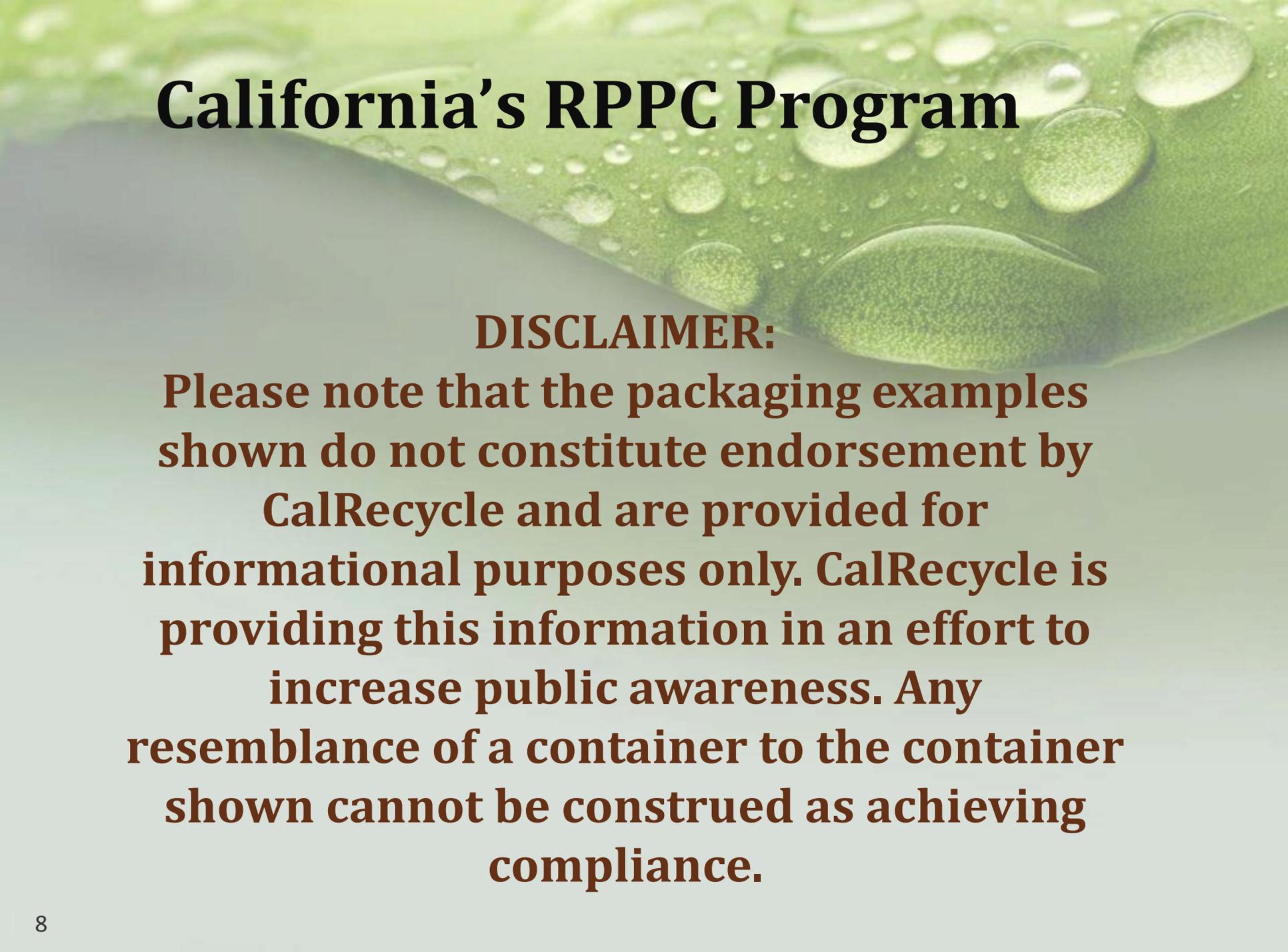
# Product Manufacturer Definition

- A product manufacturer (PM) is the responsible party for a product to be produced and sold or offered for sale in California within a compliant RPPC.
- The regulations include factors for identifying responsibility, including:
  - Ownership of a brand name
  - Primary control over product design
  - Primary control over container design



# **RPPC Examples and Demonstrations**



A close-up photograph of a vibrant green leaf, likely from a plant like a basil or similar herb. The leaf is covered in numerous clear, glistening water droplets of various sizes, which catch the light and create a fresh, natural aesthetic. The background is softly blurred, emphasizing the texture and color of the leaf and droplets.

# California's RPPC Program

## **DISCLAIMER:**

**Please note that the packaging examples shown do not constitute endorsement by CalRecycle and are provided for informational purposes only. CalRecycle is providing this information in an effort to increase public awareness. Any resemblance of a container to the container shown cannot be construed as achieving compliance.**

# What is an RPPC?

- **Is made of plastic,**
- **Has a relatively inflexible shape or form, following ASTM film plastic guidelines ( $\geq 0.25\text{mm}$  or  $0.01$  inches)**
- **Has a minimum capacity or volume of 8 fluid ounces up to a maximum capacity or volume of 5 gallons,**
- **Is capable of at least one closure, and**
- **Holds a product that is sold or offered for sale in California.**

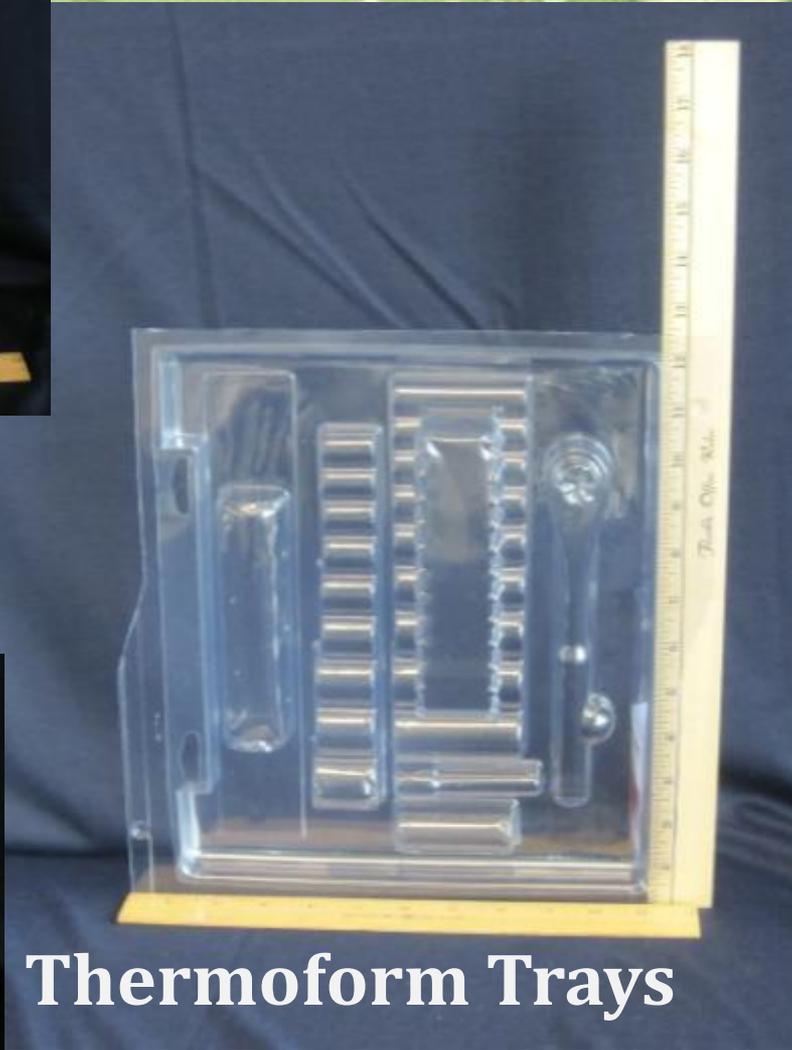
# What is an RPPC?



**Clamshells**



**Handled  
Bottles**



**Thermoform Trays**



**Tubes**



**Smaller Bottles**

# What is an RPPC?



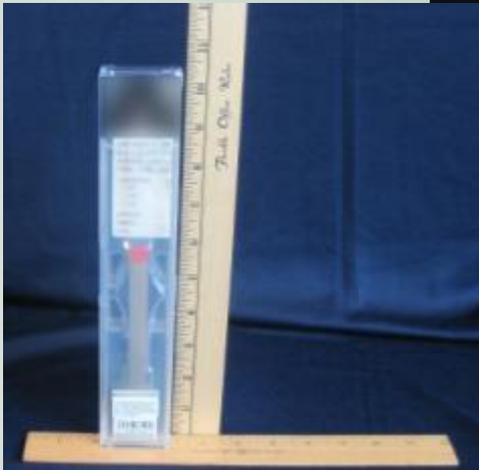
**Tubs**



**Buckets**



**Pails**



**Boxes**



**Rounds**

# RPPC Volume Capacity

**Five  
Gallon  
Bucket**

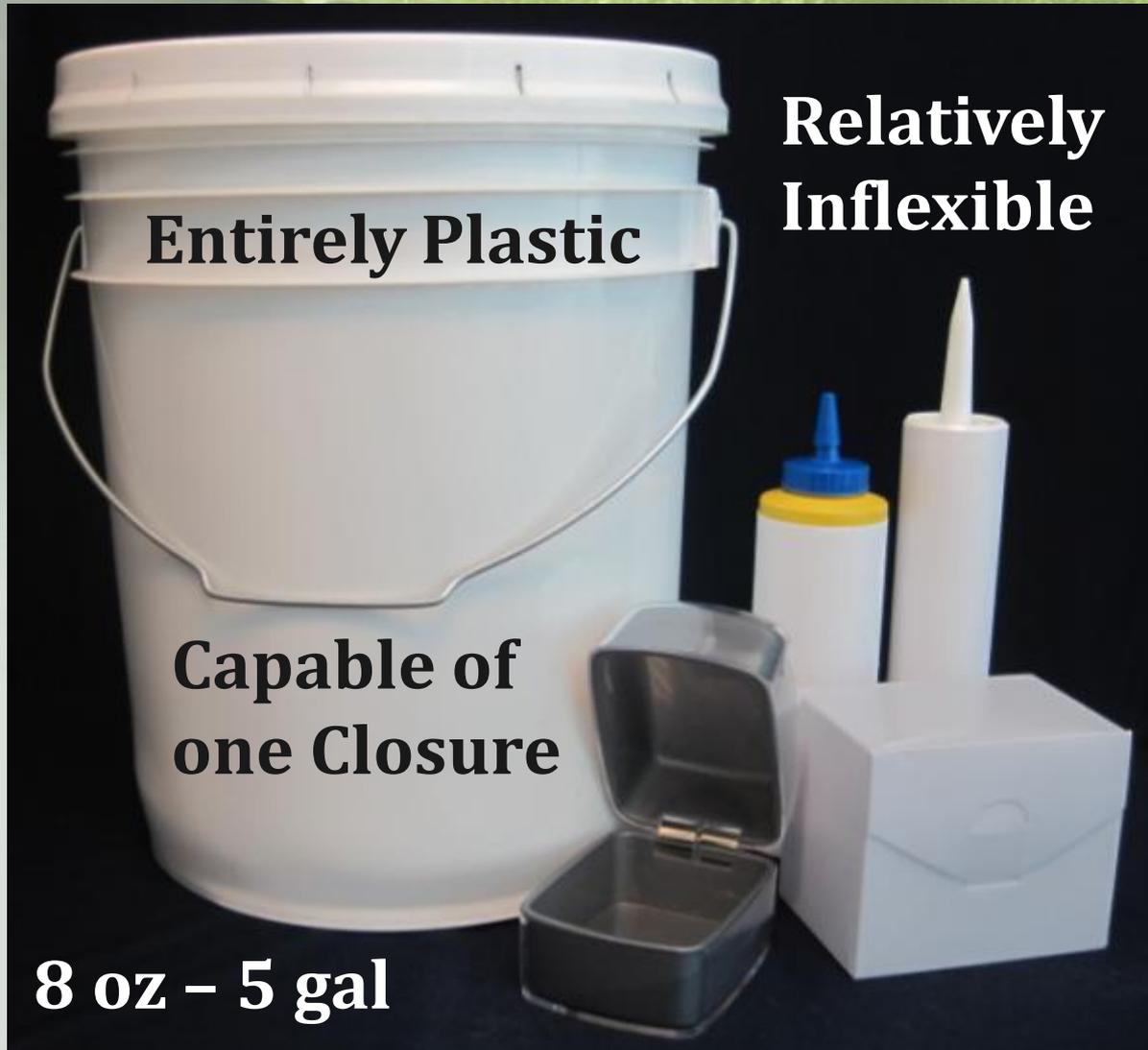


**Eight  
Ounce  
Container**

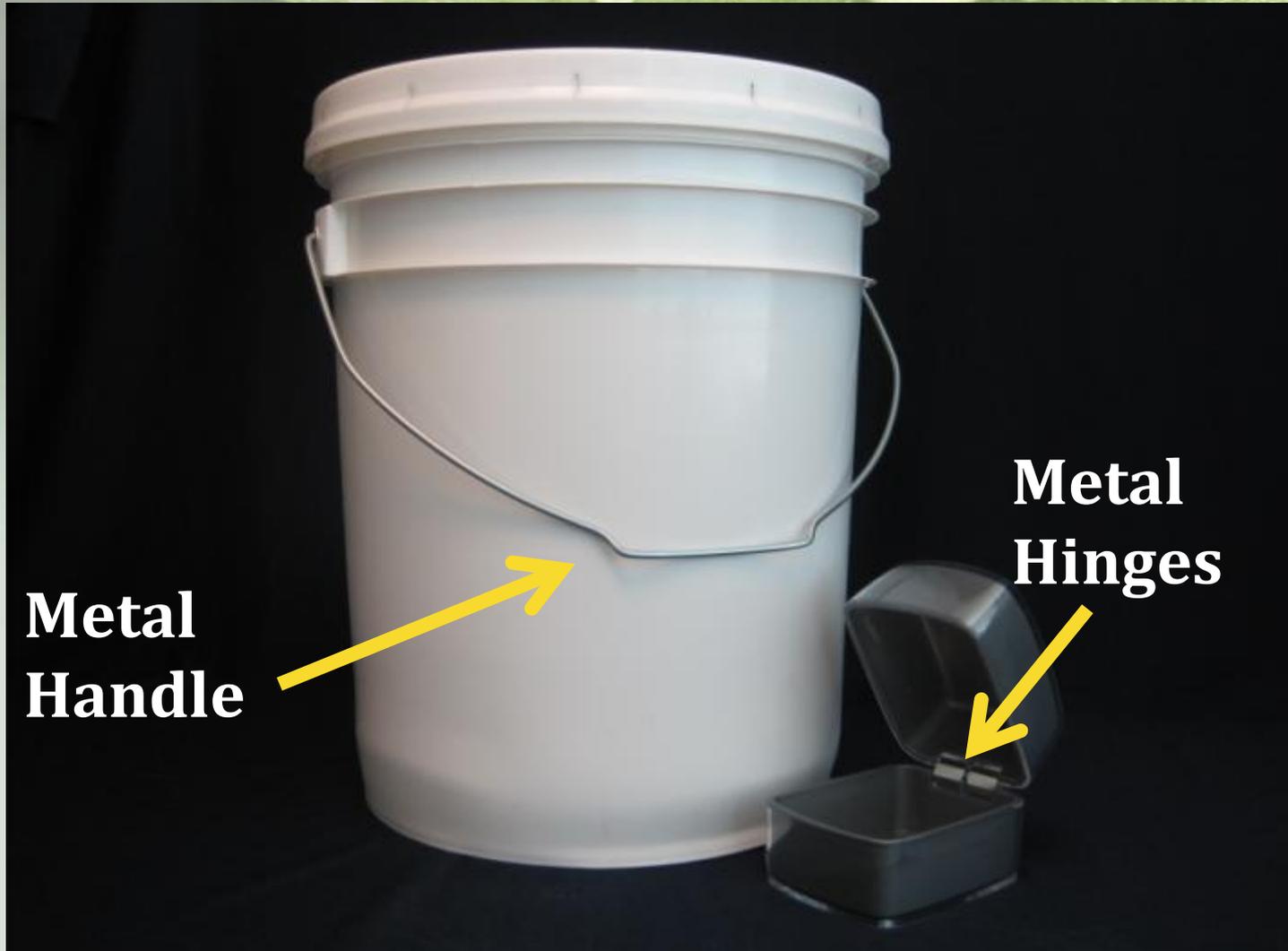
# Other RPPCs



# Other RPPCs



# Incidental Portions



# Closures

**Tube  
capable of  
multiple  
closures**



**Tube sealed by  
manufacturer**



# Collapsible Containers



**Unfolded Container**



**Folded Container**

# Unregulated Containers

**Bucket without Lid**



**Fiberboard-backed  
Container**

# Unregulated Containers



# Unregulated RPPCs



**The container does not have a lid, so therefore is not capable of at least one closure**



# **California's Rigid Plastic Packaging Container (RPPC) Program**

**[calrecycle.ca.gov/Plastics/RPPC](http://calrecycle.ca.gov/Plastics/RPPC)**

A close-up photograph of a vibrant green leaf, likely from a plant like a basil or similar herb. The leaf's surface is covered with numerous clear, glistening water droplets of various sizes, which catch the light and create a fresh, dewy appearance. The background is a soft, out-of-focus light green, making the leaf and its droplets the central focus of the image.

# **RPPC Measurement Presentation:**

## **Determining a Container's Volume**

# Container Volume Determination Methods



# RPPC Volume Range

## 8 ounces – 5 gallons



# Determining a Container's Volume



**To find out what is the size of your container, you can:**

- **Contact container manufacturer for the specifications**
- **Contact a package design engineer**
- **Self-Determine**

# Regular Shaped RPPCs



# Rectangular Box Volume Measurement

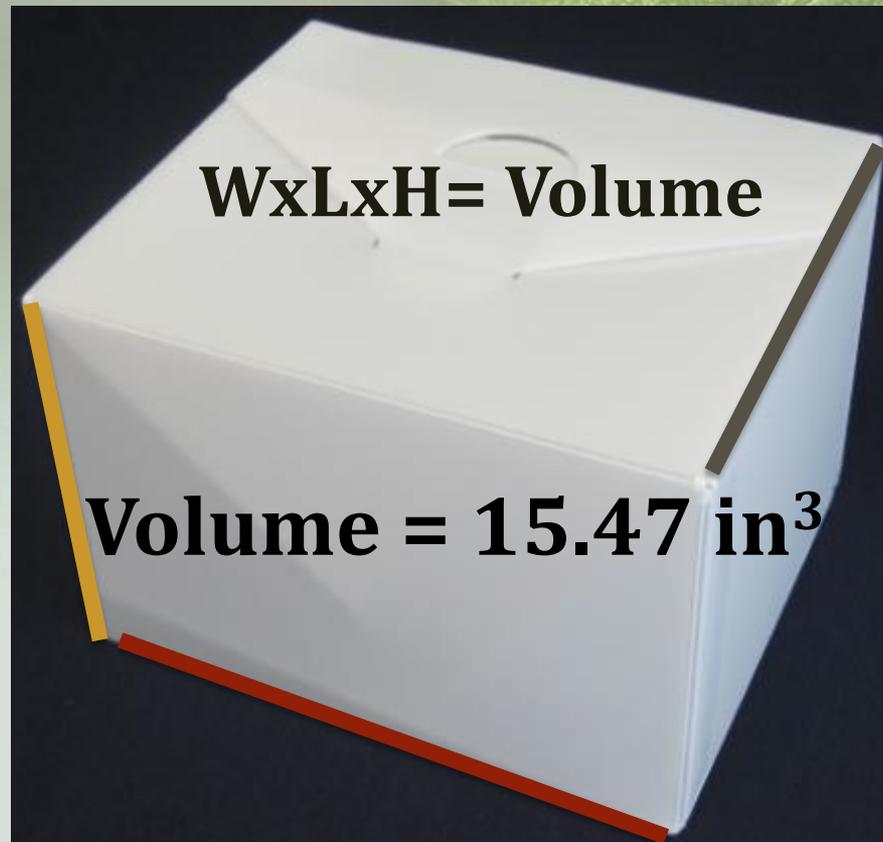
Volume for a Cube or  
Rectangular Prism:

**Width x Length x Height**



**Rectangular Prism**

# Rectangular Box Volume Measurement



Height  
2.5"

Width  
2.25"

Volume = 15.47 in<sup>3</sup>

Length  
2.75"

# Rectangular Box Volume Measurement

Converting inches to ounces;  
 $\text{fl.oz} = \text{in}^3 / 1.8046875$

$$15.47 \div 1.8046875 =$$



**8.57  
fluid ounces**

# Cylindrical Container Volume Measurement



**Volume of a cylinder  
=  $\pi$  x radius<sup>2</sup> x height**

$$\pi = 3.14$$

# Cylindrical Container Volume Measurement

Radius = 1.4"

Radius<sup>2</sup> =  
1.4 x 1.4  
= 1.96"



Height = 2.5"

Volume =  $3.14 \times (1.4)^2 \times 2.5 = 15.39 \text{ in}^3$

# Cylindrical Container Volume Measurement

$$15.39 \div 1.8046875 =$$
$$8.53 \text{ fl oz}$$



The screenshot shows the CalRecycle website interface. The main content area is titled "Rigid Plastic Packaging Container (RPPC) Program Container Determination Tools". It includes an overview paragraph, a list of links (Overview, Self-Determination, Examples of Regulated RPPCs, RPPC Exemptions, Determining a Container's Volume or Equivalent Capacity), and a "Program News..." section with several news items. A red arrow points from the "Determining a Container's Volume or Equivalent Capacity" link in the left sidebar to the corresponding link in the main content area.

## Determining a Container's Volume or Equivalent Capacity

One of the factors for determining whether a particular product's RPPC is regulated is the volume or equivalent capacity the RPPC is **capable** of holding. A regulated RPPC has a minimum capacity or volume of 8 ounces up to a maximum capacity or volume of 5 gallons. If you are unsure of a particular RPPC's total volume or equivalent capacity, consider the following:

- Contact the container manufacturer
- Work with the engineers within your company
- Conduct the measurement yourself.

Available online tools that may assist you in conducting your own measurement include:

- [U.S. Liquid Measure Volume Capacity Calculator](#)
- [Formulas to calculate shapes](#)
- [Water-dunk test](#) (YouTube)

**Calrecycle.ca.gov/Plastics/RPPC/SelfDeterminin**

# Irregular Shaped RPPCs



# **Irregular Shaped RPPCs Volume Determination**

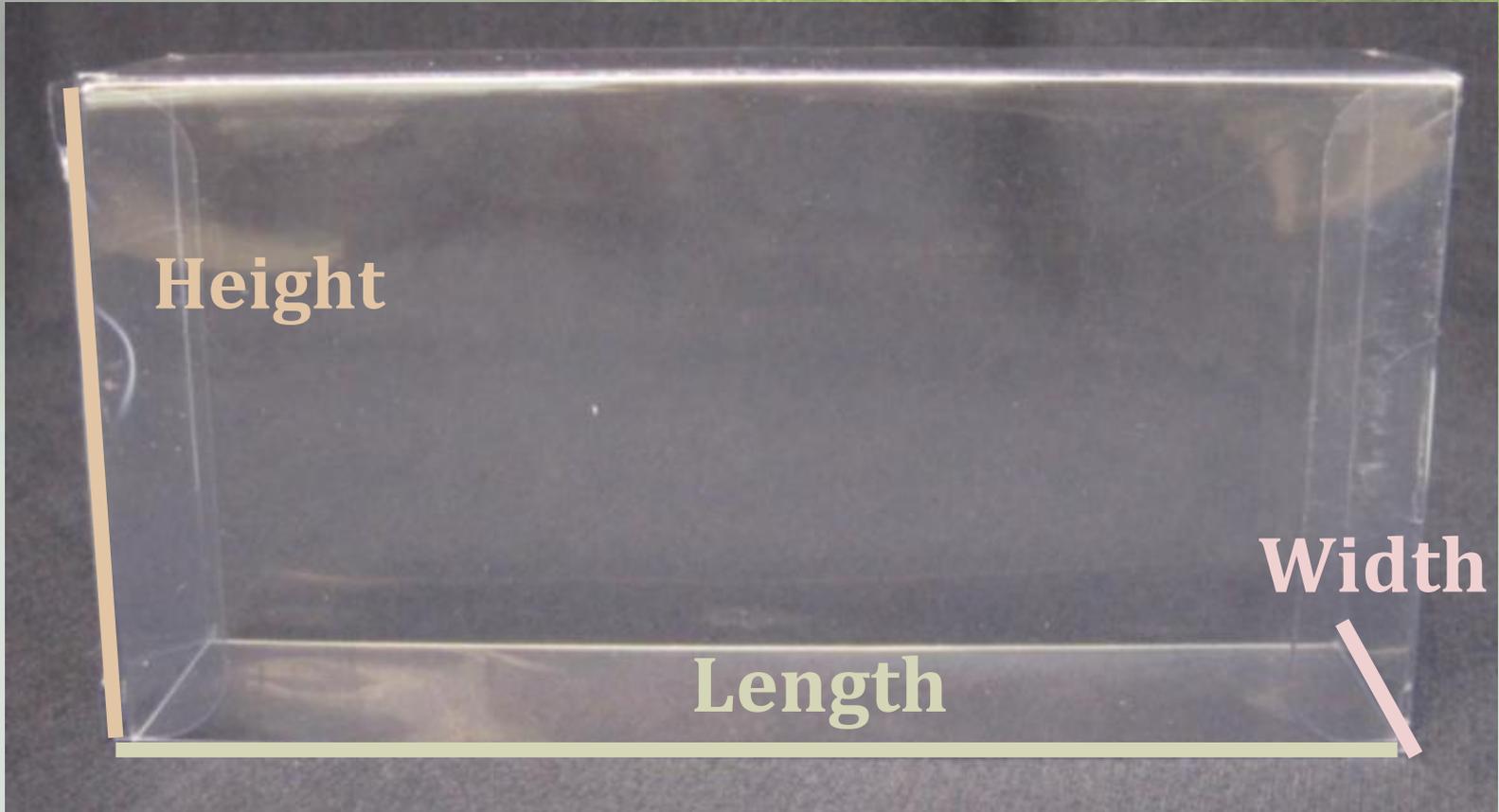
- **Rice Measurement Method**
- **Water Measurement Method**
- **Volume Displacement or Water Dunk Test**

# Irregular Shaped Container Volume Determination

## Rice Measurement Method



# RPPC Volume Determination Example



**Width x Length x Height**

# Rice Measurement Method



**Step 1: Tape any gaps or openings**

# Rice Measurement Method



**Step 2: Measure 8 ounces of rice, level off the top**

# Rice Measurement Method



**Step 3: Pour rice into empty package**

# Rice Measurement Method

**Conclusion: If the rice does not completely fill the container, then this container's volume would be considered more than 8 ounces**



# Rice Measurement Method



## Rice Measurement Method for Irregular Containers

# Rice Measurement Method



**Step 1: Tape any gaps or openings**

# Rice Measurement Method



**Step 2: Measure rice**

# Rice Measurement Method



**Step 3: Pour rice into container**

**Conclusion: If the rice spills over, this container's volume would be considered less than 8 ounces.**

# Irregular Shaped Container Volume Determination

## Water Measurement Method



# Water Measurement Method



**Step 1: Pour 8 ounces of water into a measuring cup**

# Water Measurement Method



**Step 2: Pour 8 ounces of water into the container**

# Water Measurement Method

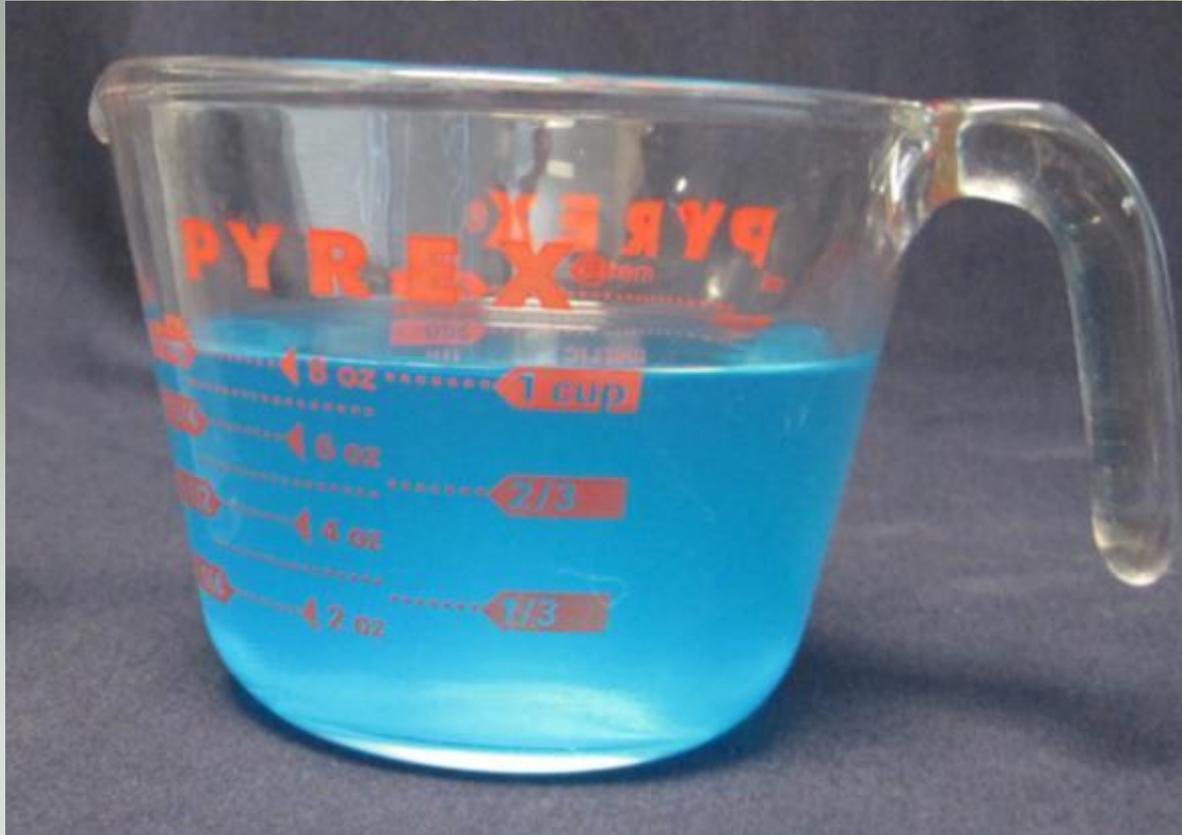
**Conclusion: If the water does not completely fill the container, then this container's volume would be considered more than 8 ounces**



# Water Measurement Method



# Water Measurement Method



**Step 1: Measure 8 ounces of water into a measuring cup**

# Water Measurement Method

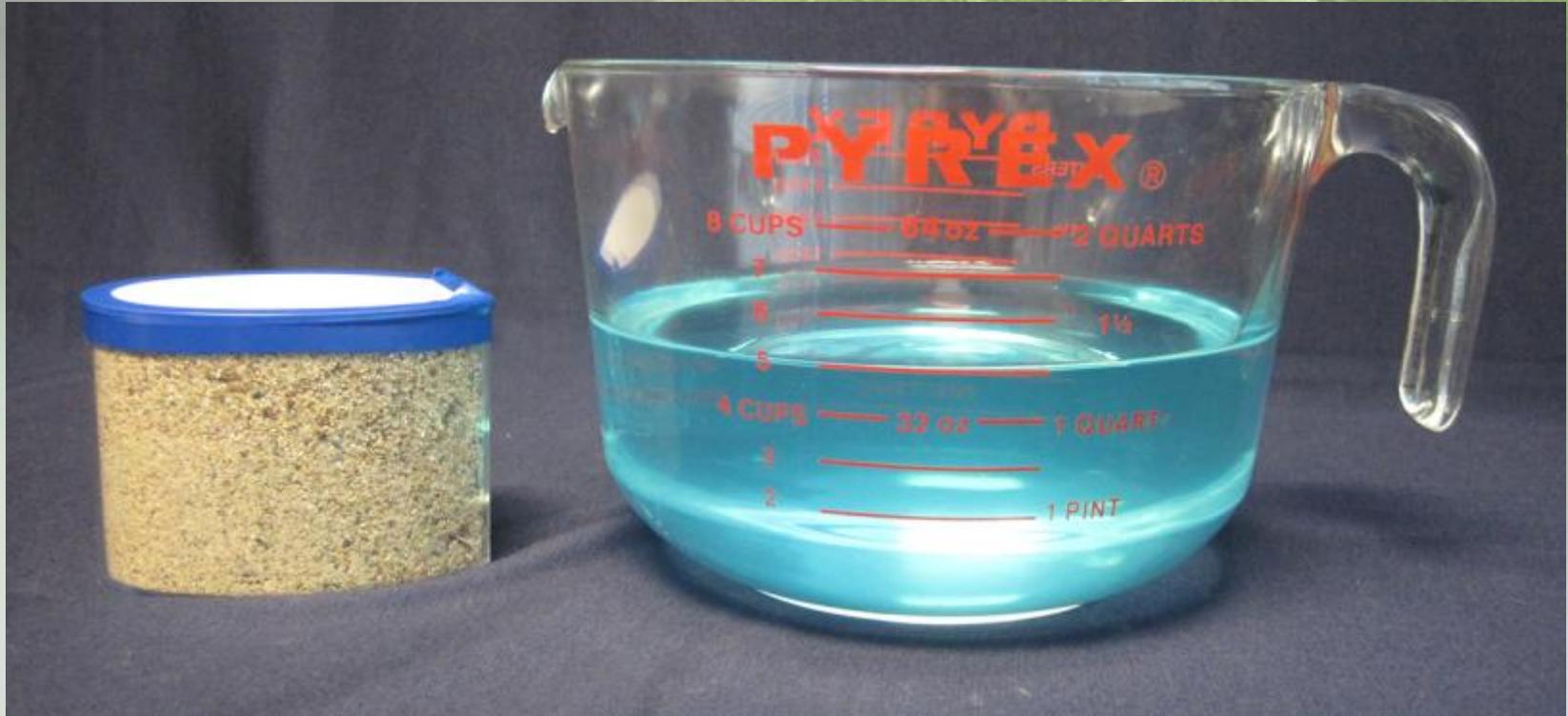


**Step 2: Pour water into the container.**

**Conclusion: If the water spills over, this container's volume is less than 8 ounces.**

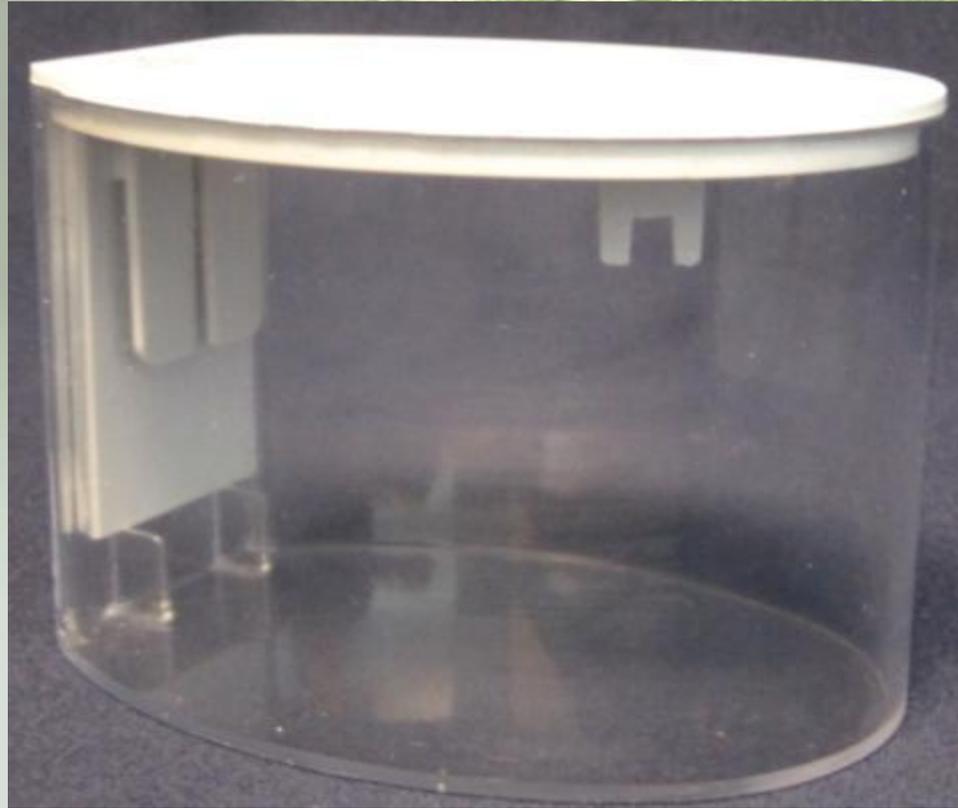


# Irregular Shaped Container Volume Determination



## Volume Displacement or Water Dunk Test

# Irregular Shaped Container Volume Determination



**Irregular Shaped Container**

# Volume Displacement or Water Dunk Test



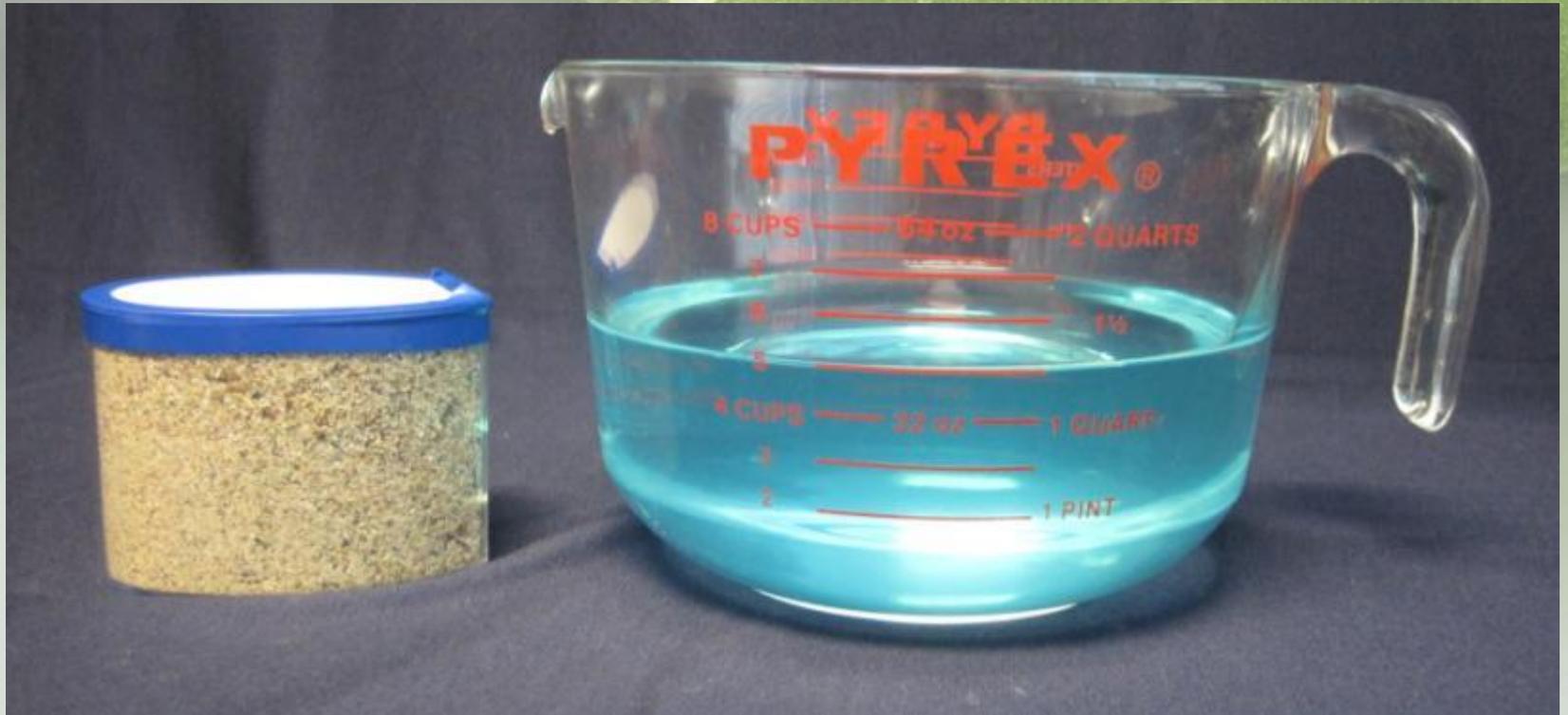
**Step 1: Fill the container with sand**

# Volume Displacement or Water Dunk Test



**Step 2: Tape any openings or gaps**

# Volume Displacement or Water Dunk Test



**Step 3: Pour pre-measured water  
into the container**

# Volume Displacement or Water Dunk Test



**Step 4: lower container into the water**

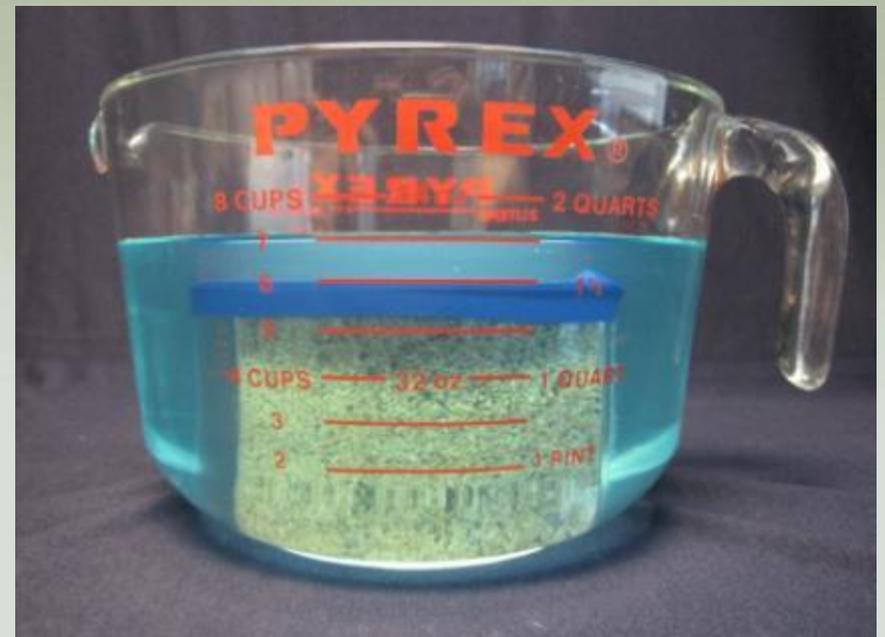
# Volume Displacement or Water Dunk Test



**Step 5: Measure the amount that the water level goes up**

# Volume Displacement or Water Dunk Test

**Conclusion:** The amount by which the water goes up is equal to the volume of the container.



# **Demonstration: Container Volume Measurement**

## **RPPC Website**

**[calrecycle.ca.gov/Plastics/RPPC/SelfDetermin](http://calrecycle.ca.gov/Plastics/RPPC/SelfDetermin)**



# Phases of Certification

The certification process takes a 3- phased approach.

The phases of the certification process include:

- Registration
- Precertification
- Compliance Certification

# Registration

- PMs identified by CalRecycle to use or potentially use RPPCs are notified of registration requirements.
- CalRecycle has developed an online registration ([calrecycle.ca.gov/Plastics/RPPC/Register.htm](http://calrecycle.ca.gov/Plastics/RPPC/Register.htm)).
- All PMs are welcome to register whether or not CalRecycle has sent their business a notice.
- Must register within 90 calendar days of notice.

# Precertification

- CalRecycle notifies a selected number of PMs that they are in the precertification phase.
- The first precertification notices were sent out in March 2013.

# Compliance Certification

- A portion of those 2013 precertification PMs will be selected to participate in a compliance certification.
- Those selected will receive a “compliance certification notice” by March 31, 2014.
- The complete compliance certification must be submitted by April 1, 2015 (the year following the 2014 measurement period).

# Phases of Certification

## Registration

- Ongoing phase. All product manufacturers are welcome to register.
- Product manufacturers who receive a registration notice must respond within 90 days.

## Precertification

- Product manufacturers are randomly selected and notified in writing that they *may* be selected to certify their product's compliance.

## Compliance Certification

- A small random selection of product manufacturers who were in the Precertification phase will be notified to submit a compliance certification following their measurement period.



# Compliance Options

To comply with the law, an RPPC must meet one of the compliance options:

- 25% Postconsumer
- Source Reduction
- Reuse
- Refill
- 45% Recycling Rate
- Floral Industry
- Alternative Container Compliance

# Postconsumer Material Content

- The RPPC must be made from at least 25 percent postconsumer material.
- “Postconsumer Material” means a material that would otherwise be destined for solid waste disposal, having completed its intended end-use and product life cycle.
- Post-industrial materials and by-products generated from, and commonly reused within, an original manufacturing and fabrication process are not considered as “postconsumer material”.

# Source Reduction

- Reduced Container Weight (10%)
- Product Concentration (10%)
- Product Concentration and Reduced Container Weight Combination (10%)
- Comparison to Similar Products in Similar Containers (10%)

# Reusable RPPC

- The RPPC is routinely reused by the end user at least five times where the reuse is to hold a replacement product.
- Example: hand washing soap container refilled by buying large container of replacement soap.

# Refillable RPPC

- The RPPC is returned to the PM.
- PM refills the RPPC.
- RPPC must be replenished at least 5 times.

# Particular Type, Product Associated, or Single Resin Type RPPC Recycling Rate

- The RPPC must be recycled at a 45 percent recycling rate.
  - A methodology must be submitted and approved by CalRecycle during certification.
- \*Particular Type, e.g., all-purpose cleaner spray bottle or detergent bottle.
- \* Product Associated, e.g., containers with one or more sizes, shapes or designs with a particular generic product line.

# Floral Industry Compliance

- The RPPC must contain floral preservatives.
- The RPPC must be reused for at least two years.
- A methodology must be submitted and approved by CalRecycle during certification.

# Alternative Container Compliance Method

- The PM, or another company under the same corporate ownership.
- Uses California postconsumer plastic material in the manufacturing of RPPCs or other plastic product or plastic packaging.
- Must be equivalent to or exceeds 25 percent postconsumer material.



# Calculating Compliance

- PMs must calculate their container compliance using the formulas in the regulations (Section 17945.5).
- Averaging can be used for the following container compliance options:
  - Postconsumer Material Content
  - Source Reduction
  - Reusable RPPC
  - Refillable RPPC

# Advisory Opinions, Waivers and Exemptions

## Advisory Opinions

- Can only be requested by Product Manufacturers in either the Precertification or Compliance Certification phase.

## Waivers and Exemptions

- Can only be requested by Product Manufacturers who have been selected for Compliance Certification phase.

# Advisory Opinion Request

- If a Product Manufacturer has a question about compliance with the RPPC law.
- Must be submitted in writing within 90 calendar days of the Product manufacturer's receipt of either a precertification or compliance certification notice.

# Waivers

- Must be submitted by a product manufacturer who has been selected to submit a compliance certification within 90 calendar days of notice, or by the end of the certification period for newly introduced products not known within 90 calendar days of the notice.
- Valid for 12 months from the date when the newly introduced product is first sold or offered for sale in California

# Exemptions

- RPPCs produced in or out of California that are destined for shipment outside the state and remain with the products during that shipment.
- Drugs, medical devices, cosmetics, food, medical food, or infant formula as defined in the Federal Food, Drug and Cosmetic Act (21 U.S.C. 301 et seq.)
- Toxic or hazardous products regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.).

# Exemptions

- RPPCs manufactured for use in the shipment of hazardous materials and are prohibited from being manufactured with used material by federal packaging material specifications and testing standards.

# To Claim Exemptions

- PM can only submit their claim in writing within 90 calendar days of receiving a **compliance certification notice.**
- PM must submit documentation to validate the exemption claim.



# Violations and Penalties

- PMs found in violation may be assessed penalties.
- Violations can include:
  - Late or non-submittal of information in any of the 3 certification phases,
  - Submittal of incomplete and/or inaccurate certifications,
  - Container non-compliance, and/or
  - Submittal of false or misleading information.
- Fines cannot exceed \$100,000 annually.

# Violations and Penalties

- Container Manufacturers that provide PMs with false or misleading information may be assessed penalties.
- Fines cannot exceed \$100,000 annually.

# Website

- The RPPC Program website can be found at:  
[\(calrecycle.ca.gov/plastics/rppc/\)](http://calrecycle.ca.gov/plastics/rppc/)
- The website is updated on a regular basis to update program new and to add additional tools to help any interested parties with the RPPC Program.



**The End**