

Dropper Pipette Buyer's Guide

Your guide to selecting the right Pipette dispensing system, for an enhanced customer experience



With **Insider Insights** from Steve Carow | [carowpackaging.com](https://www.carowpackaging.com)

Packaging decisions for your oils, tinctures, serums and flavorings can make or break the user experience with your brand.



A leaky cap or rocketing pipette can create an unhappy customer and lead to negative product reviews for all the world to read.

Having been in the dispensing business for over 30 years, we know selecting a pipette can be a daunting task. There are so many bulb, cap and tip styles and materials to choose from. We created this Dropper Pipette Buyers Guide to explain your options and make it easier for you to select just the right pipette dispensing system for your product.

You have likely heard that Carow Packaging is the first and only manufacturer of EuroDrop® caps in the USA. Well, we have taken that dispensing knowledge and combined it with our extensive sourcing experience and are excited to introduce the USA Assembled Dropper Pipette. This solution offers the following benefits:

- **Performance and Value** – made in USA cap and glass, combined with overseas bulb
- **Security** – built in tamper evident ring
- **Compatibility** – sizes available to fit standard 15, 30 and 60ml dropper bottles
- **Availability** – assembled to order in USA

It's an exciting time to be in the wellness industry, with immense growth projected in essential oil, CBD/THC, beauty and food products. We are pleased to be here to help you take advantage of this opportunity with superior products and great customer service. How can we help you grow today? Give our Solution Specialists a call at 815-455-4600.

Steve Carow

Steve Carow

President and Sales Representative
Midwest U.S. and Central Canada





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EXCITING INDUSTRIES TO BE IN!



Numbers don't lie. There are exciting things forecasted for markets that use dropper pipettes. Over the next 5-7 years you can expect:

- **31.9% growth** in CBD oil
- **\$800 billion estimated value** of the beauty industry
- **\$1.3 billion growth** of health & wellness market
- **\$20 trillion** in global food product expenditures
- **7.5% annual compounded growth** in essential oils



Pipette Dropper Dispensing System



What are Dropper Pipettes?

An eye dropper, also known as a Pasteur pipette, or dropper, is a device consisting of a small tube with a vacuum bulb that is used to transfer liquids one drop at a time. Back in the late 1800's there wasn't a system to transport a solution without exposing it to the external environment, so Louis Pasteur invented the dropper pipette.

When to Use Them

With the increasing market demand for wellness products, dropper pipettes are playing an increasingly important role in consumer applications.

Dropper pipettes are ideal when there is a need to dispense a small, controlled amount of liquid. Since users are generally familiar with this type of dispensing system, there is no learning curve needed. They also work very well where child resistant or tamper evident packaging is needed.

The drawbacks of using dropper pipettes are they can be a little messy, and there is the potential for cross-contamination when the pipette is inserted back into the bottle after use.

Need help talking through your product application needs with one of our Solution Specialists to see if a dropper pipette would work for you? Give us a call. We are happy to help.



Market Applications for Dropper Pipettes

Dropper Pipette Dispensing Systems are used for CBD/THC Oils, as well as in the Beauty, Health & Wellness, and Food & Beverage industries. Wide user acceptance, ease of use, portability, and availability are common reasons for use across all markets. Included below are the primary drivers for pipette usage within each market.

- Safety
- Purity
- Aesthetics
- Measured dosing
- Consistent functionality



CBD/THC

Safety and measured dosing are the leading drivers for choosing a pipette system in the CBD/THC market. Whether it's to keep children away from contents or to trust that the dosage is correct, consumers are looking for products that share their concerns. Oil and tincture products that are packaged with a child resistant/tamper evident cap, glass pipette with markings, and an amber or blue glass dropper bottle are sure to satisfy consumers.



Beauty

Aesthetics and functionality have long been the key considerations for the primary packaging of serums, lotions and oils. Recently, consumers have begun demanding luxury brands offer environmentally conscious materials as well. Both domestic and European packaging providers offer components which are recyclable. Some providers, like Carow Packaging, offer bottles with a high percentage of PCR. Combined with the multitude of color and style options, dropper pipette systems can offer a packaging solution that is both beautiful and responsible.





Health & Wellness

With herbal extracts and liquid vitamins, purity and controlled dispensing are key. Primary packing should come with documentation of the source materials to ensure they cannot react with the contents and cause contamination. European, as well as our USA produced products, offer material tracing. The correct pipette length, and bottles with UV protection will ensure the product is dispensed and stored properly.



Food & Beverage

With the growth of flavored beverages, pipettes are used more and more for flavor enhancers, water infusion and cocktail bitters. Like with Health & Wellness, source documentation with material tracing are important to the Food & Beverage market. In addition, with continued demand for large volume offerings, a 4oz glass bottle with a child-resistant cap and a 108mm glass pipette is the perfect solution.



What about using a pipette for essential oils?



When it comes to essential oils, the EuroDrop[®] system is the preferred method for dispensing because it offers more control, better sealing, and aggressive oils won't corrode the insert as they would a rubber pipette. However, glass pipettes are useful when transferring oils to make a blend or for dispensing extremely thick oils. If you have a question on EuroDrop[®] vs. pipette, give us a call to discuss your application.

Still not sure whether a dropper pipette system would work for you, or which components? Give our Solution Specialists a call. We are happy to help.



Pipette Dispensing System Components

A Pipette Dispensing System consists of 4 components – bulb, cap, pipette, and bottle. There are several options within each category, so we'll explain the choices then share the advantages and disadvantages of each.



Bulbs

When deciding which bulb to use for your Dropper Pipette Dispensing System, there are several considerations – material, style, capacity, and treatment. Let's walk through each one to help you choose the right bulb.

Material

Buyers can choose from three main materials for their bulbs – Natural rubber, Thermoplastic, and Thermoset. Here's what you need to know about each.

Natural Rubber

Natural rubber bulbs are made from elastic material obtained from the latex sap of trees that can be vulcanized and finished into a variety of products.

Advantages

- Very durable
- Long shelf life
- Low temperature flexibility
- Elastic
- Waterproof

Disadvantages

- Variable supply
- Inferior with regards to aging and ozone
- Not compatible with solvents or oils

Thermoplastic Elastomers (TPEs)

Thermoplastic Elastomers (TPEs) are polymers made in an injection molding machine, that soften when heated and harden when cooled. There are three types of TPE Bulbs. The two most common include:

Monprene: a high-performance line of TPE material, ideal for applications requiring stretch, flexibility and a soft-touch feel.

Santoprene: a dynamic TPE which exhibits the flexibility and soft-touch sensation of rubber, while providing the processing ease of plastics.

Advantages

- Very durable
- Compatible with glass and plastic pipettes
- Higher sustainability/recyclability

Disadvantages

- Higher cost compared to other plastics
- Loses "rubbery" property at high temperatures



Thermoset

Thermoset is a malleable polymer that is cured or heated then molded into its final shape. Once set, it can't be melted down or reformed. Unlike TPEs it can't be made in a standard injection machine. Three common thermoset bulbs are Neoprene, nitrile and silicone.

Neoprene®: A synthetic rubber that exhibits many of the characteristics of natural rubber. It is valued for its weather resistance and durability.

Nitrile: This form of synthetic rubber is generally resistant to oil, fuel, and other chemicals. It withstands abrasion well, offering superior strength but less flexibility.

Silicone: A popular material in body contact applications due to its hypoallergenic nature. It also offers heat, UV radiation and tear resistance.

Advantages

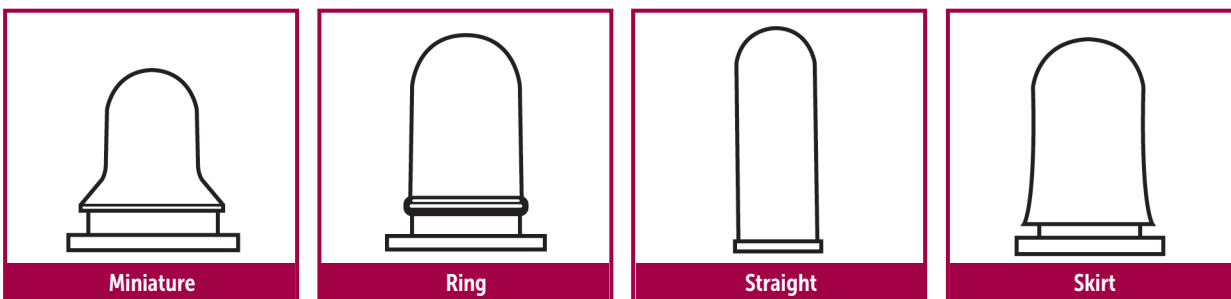
- Chemical and heat stability
- Very durable
- Choice of color and surface finishes
- Cost effective

Disadvantages

- Cannot be recycled
- Cannot be removed or reshaped
- Difficult to surface finish

Bulb Styles

There are multiple bulb styles, as illustrated below. The choice of bulb style is primarily a cosmetic one although capacity can also drive your decision. The skirt style is the most popular with our customers.



Capacity

How much liquid do you need to dispense with each application? The bulb output is determined by the bulb draw. The size of the air chamber and the amount of air displacement that a user can achieve are both factors in determining the draw.

Common bulb sizes:

- **0.8ml** - The user displaces 0.8ml of air to allow 0.8ml (max) of product to be drawn into the pipette
- **1.0ml** - The user displaces 1.0ml of air to allow 1.0ml (max) of product to be drawn into the pipette

Treatment

How important is the look and hand feel of the bulb to your customer experience? Carow Packaging offers bulbs treated with Fluoro-Seal Process® or Fluorination, which reduces any leakage of the oils, liquids, or smell. It also makes the bulb shinier for an appealing visual effect.





Caps

The second part of your Dropper Pipette Dispensing System is the cap. Caps used in a pipette dispensing system feature a hole in the top to allow for the bulb and pipette to be inserted.

Caps are readily available for Dropper Bottles, Boston Rounds and other glass and plastic bottles that use standard neck finishes. Caps come in several materials as well, including Polypropylene (PP), High density polyethylene (HDPE), and Metal Overshell.

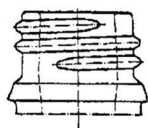
There are four types of caps depending on your application and safety requirements.

- Regular
- Tamper-evident (fit dropper bottles with 18DIN neck)
- Child-resistant
- Child-resistant & Tamper-evident (fit dropper bottles with 18DIN neck)

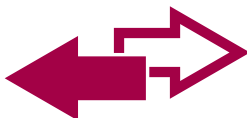


Choosing the right bottle neck.

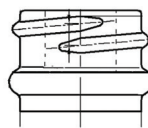
Dropper Bottle 18DIN neck



Dropper Bottles feature a tamper evident transfer ring and are 18DIN or 18GL neck size



Boston Round neck



Boston Round bottles do NOT have a tamper evident transfer ring and have several different neck sizes.

What does the bottle neck have to do with selecting the appropriate cap? **EVERYTHING.**

A dropper bottle has a standard 18DIN neck finish that ensures a proper fit with any 18DIN cap. Additionally, dropper bottles feature a built in tamper evident transfer ring that allows for the band of a tamper evident cap to slide over the ring and remain on the bottle once the cap is opened, indicating if the contents have been "tampered" with.

Boston Round bottles do not have a universal neck size, thus multiple caps may be required, and each must be carefully measured and tested to ensure fit. If tamper evidence is desired with a Boston Round bottle, the only option is to apply shrink wrap after the capping process.



Regular Cap



Sizes

- Diameter Range – 13mm-28mm
- Height Options – 400, 410, 415, 18DIN, Cosmetic H dims

Materials

- PP, HDPE, Phenolic, Urea, Metal Overshell

Finishes

- Ribbed, Smooth, Metal Overshell

Tamper Evident (TE) Cap



Sizes

- 18DIN
- PP18 and PP28 (Pilfer Proof)

Materials

- HDPE, PP plus HDPE ring, PP

Finishes

- Ribbed, Metal Overshell

Child Resistant Cap



Sizes

- 18DIN, 18-400, 20-400, 22-400, 24-400
- Height Options – 18DIN, 400

Materials

- PP

Finishes

- Ribbed, Metallic

Child Resistant/Tamper Evident (CR/TE) Caps



Sizes

- 18DIN

Materials

- PP inner/PP outer, HDPE inner/PP outer

Finishes

- Ribbed





Pipettes

The third component of the Pipette Dispensing System is the pipette itself. Pipettes are available in glass or plastic and can be custom printed (aka, marked) with measurements for accurate dosing. Length and tip style are the main considerations.

Length

Pipettes are available in different lengths. To choose which length you need, the pipette should land 2-3mm above the bottom of the bottle when cap is tightened.

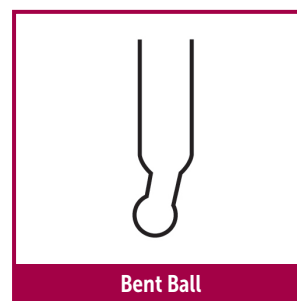
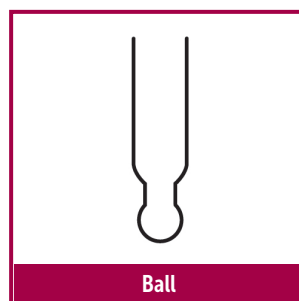
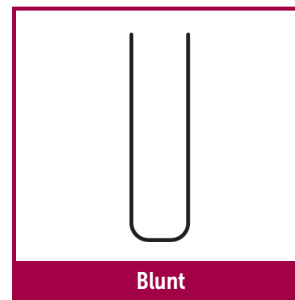
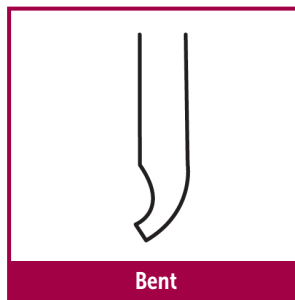
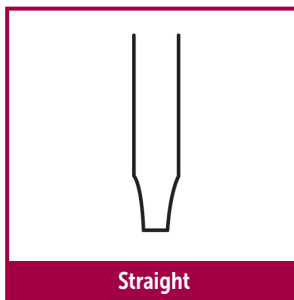
18-DIN Dropper Bottles	
Capacity	Pipette Length
15 ml	7x59-66*
30 ml	7x76
60 ml	7x89
120 ml	7x108*

Boston Round Bottles	
Capacity	Pipette Length
.5 oz	7x66*
1 oz	7x76-77*
2 oz	7x89
4 oz	7x108-109*

*Varies by bottle manufacturer

Tip Style

One of the most important considerations when choosing your pipette is the tip. There are five different tips available.



The US wellness industry primarily uses Straight and Bent tips, while the Bent and Ball tip are most common in Europe.





Why is the Ball tip so popular in Europe?



- A straight tip produces different drop sizes as the “drop forming surface” alters. That’s not the case for a spherical surface, like your eye for example.
- The dropping area around a sphere always remains the same, no matter the angle you hold the pipette. This ensure a uniform drop each and every time, thus dosing is more consistent.
- From a safety/quality standpoint, there are no edges or sharp lines, so damages or chipping during transport or filling/capping is far less likely. Also, there is significantly less probability to hurt the user if something needs to be administered in the nose, ear or eye.
- Disadvantages would be case specific as some pipettes are specifically designed for a given purpose.





Bottles

Now that we have examined dispensing options, let's consider the types of containers you can choose for liquid applications.

Specifically, we'll consider the advantages and disadvantages of glass and plastic bottles.

Plastic Bottles



Advantages

- Production is readily available
- Shatter resistant
- Custom color options

Disadvantages

- Inferior barrier to oxygen
- Can interact with aggressive products leading to product contamination

Glass Bottles

Advantages

- Inert and can store liquids for long periods of time
- Less light sensitive, particularly amber glass
- Substantial, upscale hand feel

Disadvantages

- Potential for breakage
- Heavier, leading to higher shipping expense



Questions You Need to Ask to Choose the Right Dispensing System

Spend 15 minutes in this upfront assessment to save you hours and even days identifying the correct packaging for your needs. Or, if you are still not sure, your answers here will help our Solution Specialists identify the ideal pipette dispensing system for you.

Function

- What do you need this dispensing solution to do?
- Is the packaging compatible with your product?
- How accurate does the dosing need to be?
- How aggressive is the oil/liquid/serum product?
- Will this part work on your capping and filling line?
- What are your shipping requirements/limitations?

Price

- What are you expecting to pay per unit?
- What does the per unit price include?
- Is service/support required?
- What is the total price of ownership?

Availability

- How much do you need and when?
- What is your ability to store inventory?

Quality

- Is your tolerance low, medium, or high for functional variation over thousands of parts?
- Do you fall under regulatory control or certification?
- How important is sustainability?
- How important is look, feel, brand image, etc...?

NOTE: Always make your final decision after thorough testing to see what materials and shapes meet your needs.

*If you are still aren't sure, please give us a call. We are happy to help your narrow down your options and find the right solution for your product. **Our Solutions Specialists can be reached at 815-455-4600 or sales@carowpackaging.com.***



Why Choose Carow Packaging as Your Trusted Partner?

We are the most knowledgeable, high-touch company that brands trust to design, source and supply their safe, cost-effective dispensing packaging solutions. If you are looking to create an exceptional customer experience, trust us. We'll make you look good.



Specialized knowledge and focus.

Carow Packaging combines the technical knowledge of a manufacturer with the selection of a distributor to offer qualified options that meet your needs. There is simply not another company that has our combination of technical expertise and sourcing knowledge. With over 30 years of specific industry experience, we answer your questions before you even ask them. And, we are happy to share our knowledge to help your company grow.



Your trust means everything.

At the end of the day, what we offer you is a strong relationship built on trust so you can rest easy knowing we will design, source, and supply the right packaging for you to deliver a great experience to your customers. On time, every time.



Reliable, honest service.

The Golden Rule is our mantra. We treat our customers like we would like to be treated. So, you can count on us to deliver what we say, when we say it will arrive. We are honest and open in our communications and nimble and flexible in our service. In fact, some of our clients have been with us from day one. That says a lot.



Safety is important to us.

We go above and beyond when it comes to the safety of our dispensing products. We do exhaustive research on materials, designs and sourcing to provide the safest options for you. We make our expert engineers available, providing testing and analysis, to help you avoid costly and upsetting issues later. We've got your back!



We put the speed in your supply chain.

We know that getting your products to market quickly is essential so we offer multiple ways to improve the order process. First, we apply our years of industry knowledge and experience to quickly hone in on a solution, saving time and expense of trial and error. Next, we have a pre-qualified set of manufacturers in the US and abroad to provide sourcing options that fit your budget and time frame. And with multiple warehouses across the US, we can inventory your product and deliver it to you when needed. Finally, we offer a pipette solution that is assembled in the USA using caps and glass manufactured locally. No waiting for overseas lead times or shipping delays.



Get Your Complimentary Dropper Pipette System Sample Kit

It's time to enhance your dispensing quality, safety and customer experience and that starts with our complimentary Pipette Sample Kit.

The kit includes a collection of bulbs, caps and pipettes that fit the most common bottle capacities. Need something specific? Let us know and we will send that sample along for FREE as well.

Contact us today for your complimentary DROPPER PIPETTE SYSTEM Sample Kit.

815.455.4600

sales@carowpackaging.com



Resources

<https://www.grandviewresearch.com/industry-analysis/essential-oils-market>

<https://www.globenewswire.com/news-release/2020/04/20/2018808/0/en/CBD-Oil-Market-Size-2020-Industry-Share-Growth-Trends-Revenue-Analysis-Top-Leaders-Dr-Hemp-Me-Green-Roads-Royal-CBD-CBD-Oil-Europe-King-CBD-Says-DBMR-Analyst.html>

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