



INNOVATION. **PRECISION.** EXCELLENCE.

PRECISION PACKAGE: METER MIX

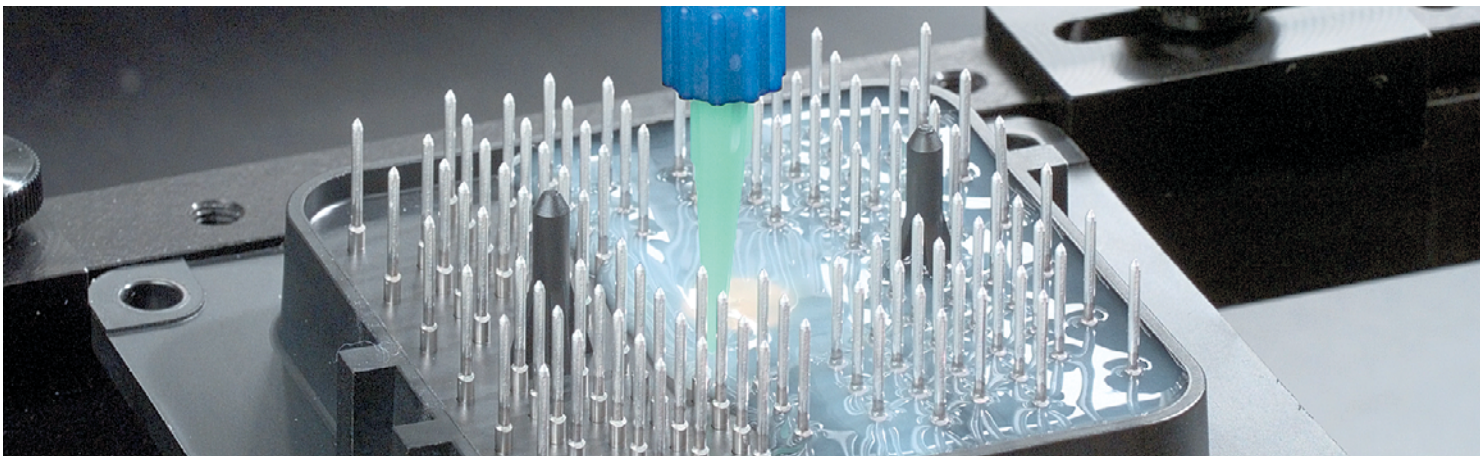


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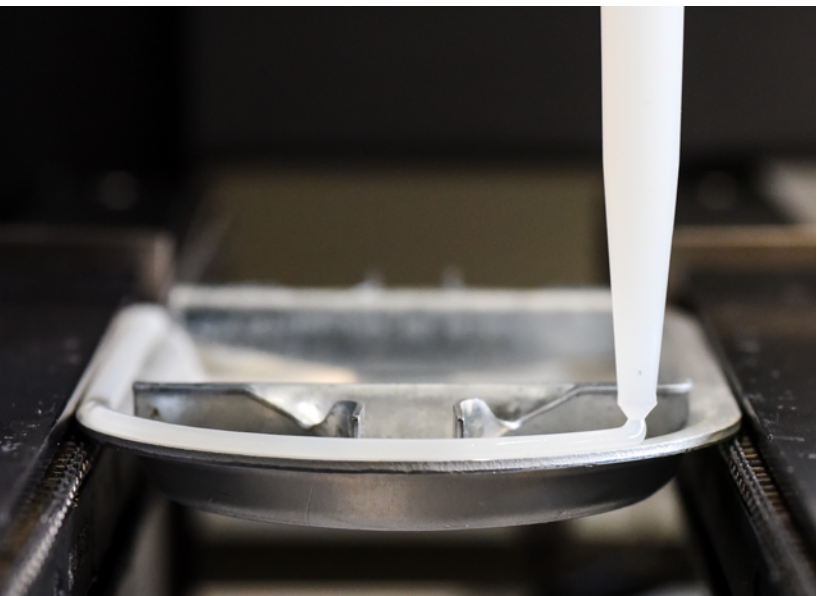
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METER MIX APPLICATIONS



Meter mix equipment can be employed to provide accurate proportioning, thorough blending, and precise dispensing of multi-component fluids. Chemistries requiring meter mix dispensing equipment are widely used across numerous applications including potting, sealing, bonding, and encapsulation.

Multi-component chemistries feature a resin and hardener that can provide technical advantages over their single-component counterparts. End users look to multi-component materials for improved performance with conductive fillers, spacers, and accelerated cure times initiated by a chemical chain reaction during the blending

process. Precise dosing of the resin and hardener resulting in accurate proportioning assures optimized performance of the chemistry.

Important considerations when selecting a multi-component chemistry include the mix ratio, viscosity delta of the resin and hardener, filler presence, particle size and suspension, pot life, and shot size.

PVA offers a wide variety of solutions for meter mix applications. Contact us for more information on equipment selection and options.

KEY INDUSTRIES

- Automotive
- Aerospace
- Consumer Electronics
- Industrial
- LED
- Medical Devices
- Military
- Telecommunications

View our white papers on meter mix:



Meter Mix Dispensing Basics

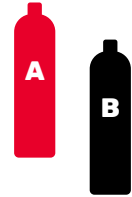
DEFINING YOUR SOLUTION

There are many instances where a meter mix system is the right choice as a dispense solution. While the vast array of possibilities may seem hard to define, having answers to the four areas below will help start the process of creating a solution in a reasonable time frame.

STEP 1: Part A and B Materials

If necessary, call the material manufacturer to obtain information and discuss properties such as:

- Viscosity
- Specific gravity (or density)
- Base chemistry (silicone, urethane, epoxy, etc.)
- Identify any filler materials
- Identify any special properties such as shear thinning or thickening
- Provide technical data sheet and MSDS



STEP 2: Ratio and Target Accuracy

Define the ratio and target accuracy of the meter mix application. For example:

- A ratio of 10:1 +/-10% translates to an acceptable range from 9:1 to 11:1. Is this an acceptable range for your process?*



STEP 3: Production Rate

The production rate can typically be expressed through:

- Shot size with accuracy (e.g., 10 gram shot $\pm$ 10%*)
- Flow rate with accuracy (e.g., 100 grams/minute $\pm$ 10%*)

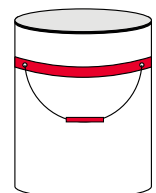


STEP 4: Supply System

Defining the supply system is driven by answers for Steps 1-3. For example:

- What are the available material container sizes?
 - » Of the options available, which size is the best for the intended use?
 - » Does this size make sense with the production rate?

Based on material properties, ratio, production rate, and accuracy requirements, the supply system can be selected.

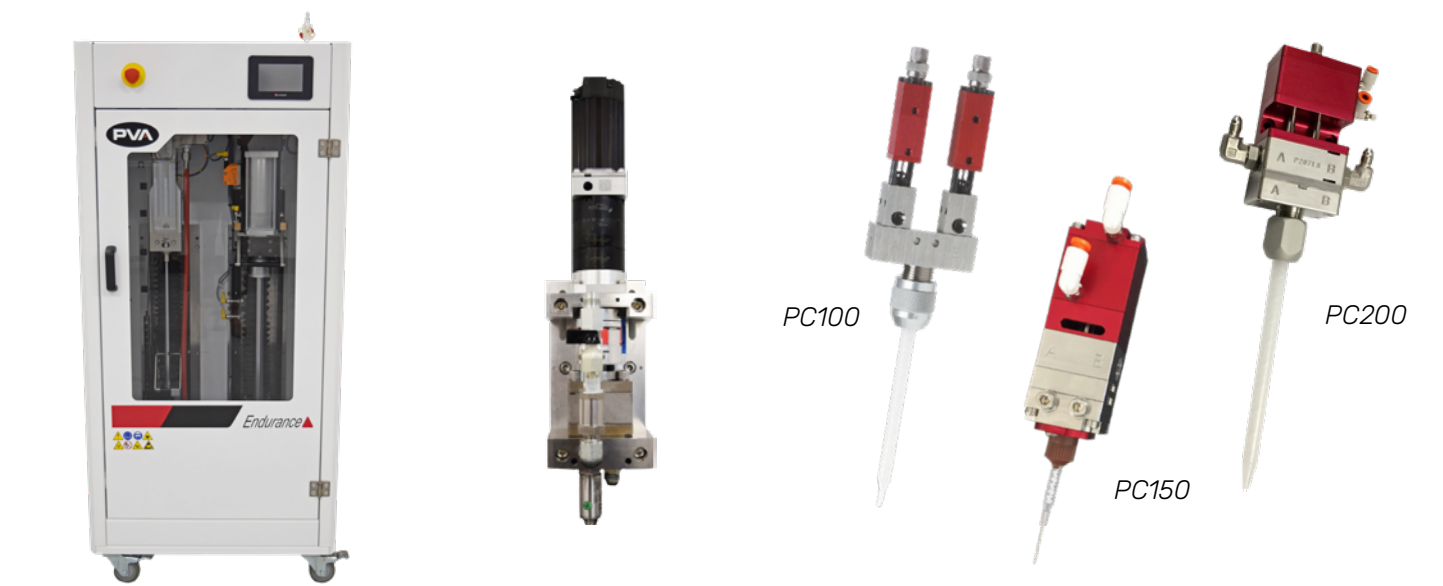


**Numbers provided are examples for the purpose of this document. Based on your process needs, your numbers may differ.*

COMMON PACKAGES

Some of the most common packages of metering systems, valves, and control modules included in our **Precision Package: Meter Mix** are shown below. For more information or to inquire about a custom solution, please contact PVA at info@pva.net or 518-371-2684.

Package #1: Endurance + SGP + PC100 / PC150 / PC200

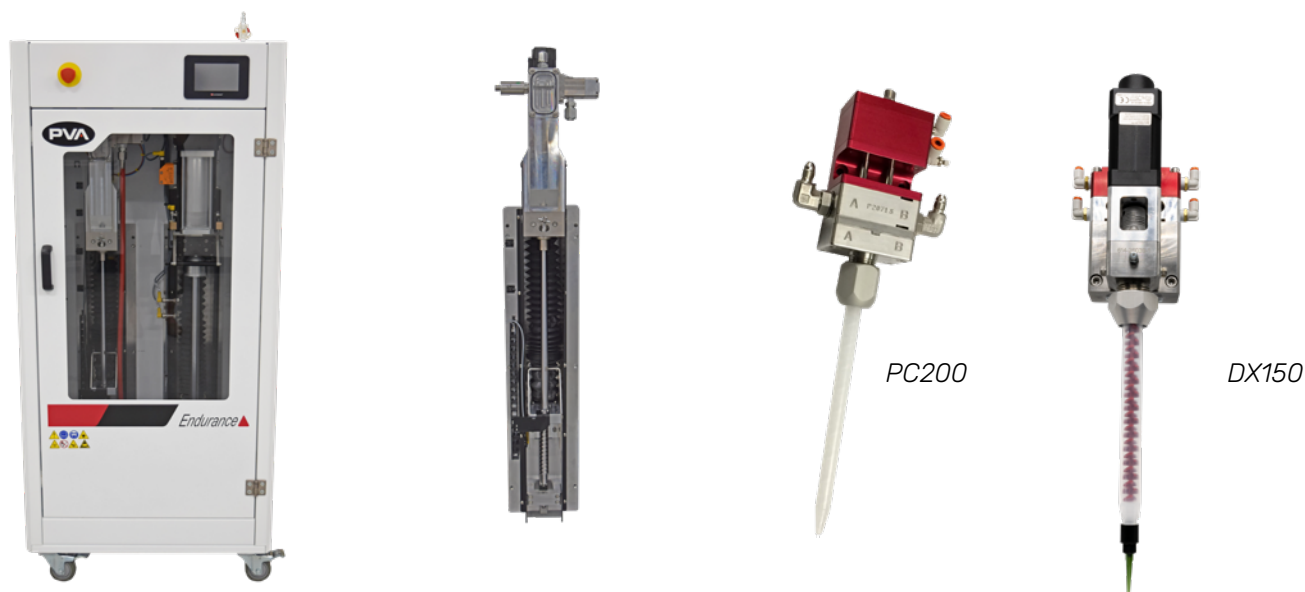


MATERIAL PROPERTIES	SHOT SIZE				
		Micro Shot (0.1 - 3 ml)	Small Shot (1 - 32 ml)	Medium Shot (25 - 160 ml)	Large Shot (160 ml+)
	Paste Viscosity	●	●	●	●
	Paste Viscosity - Abrasive				
	Self-Leveling High Viscosity	●	●	●	●
	Self-Leveling High Viscosity - Abrasive				
	Low Viscosity Liquid	●	●	●	●
	Low Viscosity Liquid - Abrasive				

Fluid supply options: cartridge, tank, pail, or drum

COMMON PACKAGES (CONT'D)

Package #2: Endurance + SPP + PC200 / DX100



SHOT SIZE					
MATERIAL PROPERTIES		Micro Shot (0.1 - 3 ml)	Small Shot (1 - 32 ml)	Medium Shot (25 - 160 ml)	Large Shot (160 ml+)
	Paste Viscosity				
	Paste Viscosity - Abrasive				
	Self-Leveling High Viscosity		•	•	•
	Self-Leveling High Viscosity - Abrasive				
	Low Viscosity Liquid		•	•	
	Low Viscosity Liquid - Abrasive		•	•	

Fluid supply options: cartridge, tank, pail, or drum

COMMON PACKAGES (CONT'D)

Package #3: Endurance + SCTP + PC200 / PC200-TCM



MATERIAL PROPERTIES	SHOT SIZE				
		Micro Shot (0.1 – 3 ml)	Small Shot (1 – 32 ml)	Medium Shot (25 – 160 ml)	Large Shot (160 ml+)
	Paste Viscosity		●	●	
	Paste Viscosity - Abrasive		●	●	
	Self-Leveling High Viscosity		●	●	
	Self-Leveling High Viscosity - Abrasive		●	●	
	Low Viscosity Liquid				
	Low Viscosity Liquid - Abrasive				

Fluid supply options: 20 oz Semco™ cartridge (32 oz optional)

COMMON PACKAGES (CONT'D)

Package #4: Delta 8 + PDP

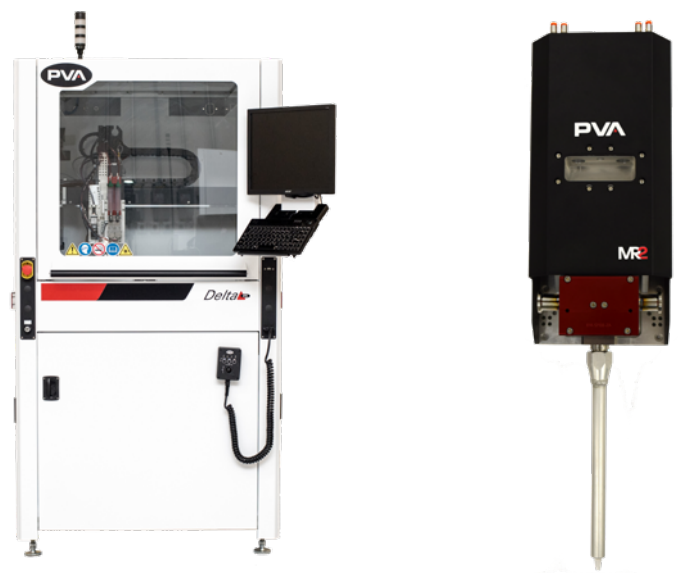


MATERIAL PROPERTIES	SHOT SIZE				
		Micro Shot (0.1 - 3 ml)	Small Shot (1 - 32 ml)	Medium Shot (25 - 160 ml)	Large Shot (160 ml+)
	Paste Viscosity	●	●	●	●
	Paste Viscosity - Abrasive	●	●	●	●
	Self-Leveling High Viscosity	●	●	●	●
	Self-Leveling High Viscosity - Abrasive	●	●	●	●
	Low Viscosity Liquid	●	●	●	●
	Low Viscosity Liquid - Abrasive	●	●	●	●

Fluid supply options: syringe, cartridge, tank, pail, or drum

COMMON PACKAGES (CONT'D)

Package #5: Delta 8 + MR2



MATERIAL PROPERTIES	SHOT SIZE				
		Micro Shot (0.1 - 3 ml)	Small Shot (1 - 32 ml)	Medium Shot (25 - 160 ml)	Large Shot (160 ml+)
	Paste Viscosity		●	●	
	Paste Viscosity - Abrasive		●	●	
	Self-Leveling High Viscosity		●	●	
	Self-Leveling High Viscosity - Abrasive		●	●	
	Low Viscosity Liquid		●	●	
	Low Viscosity Liquid - Abrasive		●	●	

Fluid supply options: cartridge, tank, pail, or drum



COMMON PACKAGES (CONT'D)

Package #6: SMR + PC200 / PCC500



MATERIAL PROPERTIES	SHOT SIZE				
		Micro Shot (0.1 – 3 ml)	Small Shot (1 – 32 ml)	Medium Shot (25 – 160 ml)	Large Shot (160 ml+)
	Paste Viscosity			●	●
	Paste Viscosity - Abrasive			●	●
	Self-Leveling High Viscosity			●	●
	Self-Leveling High Viscosity - Abrasive			●	●
	Low Viscosity Liquid			●	●
	Low Viscosity Liquid - Abrasive			●	●

Fluid supply options: tank, pail, or drum

COMMON PACKAGES (CONT'D)

Package #7: BP50 (50 ml Bi-Pack Dispenser with Stopcock) + ST100



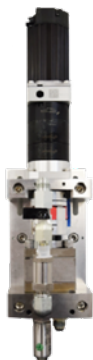
MATERIAL PROPERTIES	SHOT SIZE				
		Micro Shot (0.1 – 3 ml)	Small Shot (1 – 32 ml)	Medium Shot (25 – 160 ml)	Large Shot (160 ml+)
	Paste Viscosity	●	●	●	
	Paste Viscosity - Abrasive	●	●	●	
	Self-Leveling High Viscosity	●	●	●	
	Self-Leveling High Viscosity - Abrasive	●	●	●	
	Low Viscosity Liquid	●	●	●	
	Low Viscosity Liquid - Abrasive	●	●	●	

Fluid supply options: 50 ml bi-pack, other sizes available upon request

FEATURED PRODUCTS

To learn more about any product featured in this brochure, scan the corresponding QR code.

SGP



SCTP



SPP



PC100



PC150



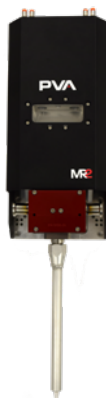
PC200 SERIES



DX150



MR2



PDP SERIES



FEATURED PRODUCTS (CONT'D)

SMR



ENDURANCE



DELTA 8



ST100



FREQUENTLY ASKED QUESTIONS

What metering process should I select for my application?

Selecting the appropriate metering process is a balance of evaluating your material properties, shot size range, and required cycle time.

Each metering process has its own pros and cons as these factors are evaluated. Your local PVA representative can assess your process parameters and make a recommendation while presenting the advantages of each technology in your application.

What shot sizes and shot types can you dispense?

Shot size is virtually unlimited, with the smallest volume shots typically generated by our progressive cavity pump (PDP015). PVA's wide range of metering solutions can dispense dots, beads, or large volume potting doses providing the end user ultimate process flexibility.

What does "pot life" mean?

Pot life is the amount of time it takes for a mixed viscosity to double. In processing your chemistry this is typically the limit of handling time we consider in designing a dispensing solution.

What is dynamic mixing and why should I consider this option?

In dynamic mixing, each component is fed into a mixing chamber and blended by a rotating mixer. Mixing is achieved using shear and elongation blades. Mixer speed is controlled allowing for homogeneous blending of chemistries with wide viscosity or mix ratio ranges.

My chemistry has filler in it. Is this a problem?

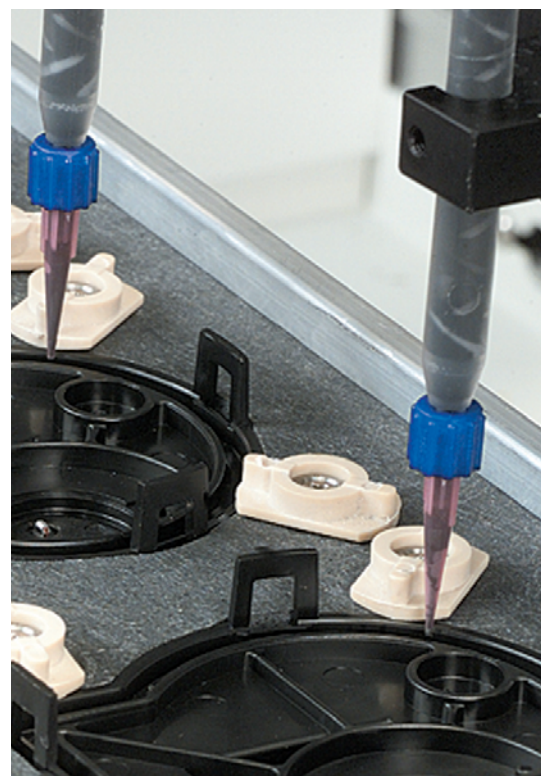
Fillers can provide a number of tangible benefits to an end user, thus they are quite common in meter-mix applications. Fillers are not a problem, though they can prematurely wear processing equipment based on their hardness and particle size. The presence of fillers in the chemistry is a contributing factor in equipment selection to help ease shear on any solid content and utilize wear resistant designs.

I'm worried about maintenance. How much cleaning is required?

PVA's solutions are designed to optimize ease of use and minimize maintenance. Our mixing heads keep each individual component isolated until blended outside of the valve body. Throughout the day we recommend purging the mixer elements prior to the chemistry's published pot life. This process is automated in our integrated solutions. At the end of the day simply remove your disposable mixer, discard, and cap the valve. No additional cleaning or purging is required.

My chemistry needs heating and agitating. Can you provide these options?

Yes, PVA evaluates each application and provides a solution created just for you. If your process requires dispensing at a specific temperature, agitation, degassing, or recirculation, we can provide a solution.



Leader in World Class Dispensing, Coating, and Custom Automation

PVA is a world class innovator of high quality, repeatable dispensing and conformal coating systems. We manufacture turnkey solutions that help our customers improve their competitiveness. We do that through engineering robust processes that introduce repeatable results that reduce waste, increase throughput, and lower manufacturing costs. Our flexibility is unmatched as each solution is customized to optimize your manufacturing goals.

Headquartered in Upstate New York, with regional sites stationed throughout North America, Europe, and Asia, all PVA Systems are backed by a 24-hour global service network.

PVA Global Headquarters

6 Corporate Drive

Halfmoon, NY 12065



+1 518-371-2684



+1 518-371-2688



info@pva.net

PVA Asia Pacific Headquarters

#104, The Sharp Center City APT,

East-Daegu Station

Daegu, Korea



+82 10-5646-8085



pkim@pva.net

PVA Europe Headquarters

Engelseweg 235 NL – 5705AE

Helmond, The Netherlands



+31 492 792729



pvdv@pva.net

PVA Asia Headquarters

Room 301, Blk#B, Ascendas Xinsu Square

No. 5 Xinghan St, SIP

Suzhou, P.R. China 215021



+86 512 8766 0918



cs.china@pva.net

PVA Mexico Headquarters

Parque Pinar Empresarial

Camino al Cucba #175. Nave -#81

Col. Venta del Astillero

Zapopan, Jalisco 45221



dgomez@pva.net