

# Dispensing Corning® Matrigel® Matrix Solutions with a Corning Step-R™ Repeating Pipettor

CORNING

## Guidelines for Use

### Corning Step-R Repeating Pipettor

The Corning Step-R repeating pipettor (Corning Cat. No. 4217) is suitable for dispensing viscous liquids, and for all applications where long dosing series are required. The fast and precise multiple dispensing enabled by the Corning Step-R repeating pipettor is particularly useful in Corning Matrigel matrix self-coating protocols for cell culture in multiwell plates or microplates. Sterile syringe tips are available in a range of sizes to dispense doses from 1 µL up to 5 mL.

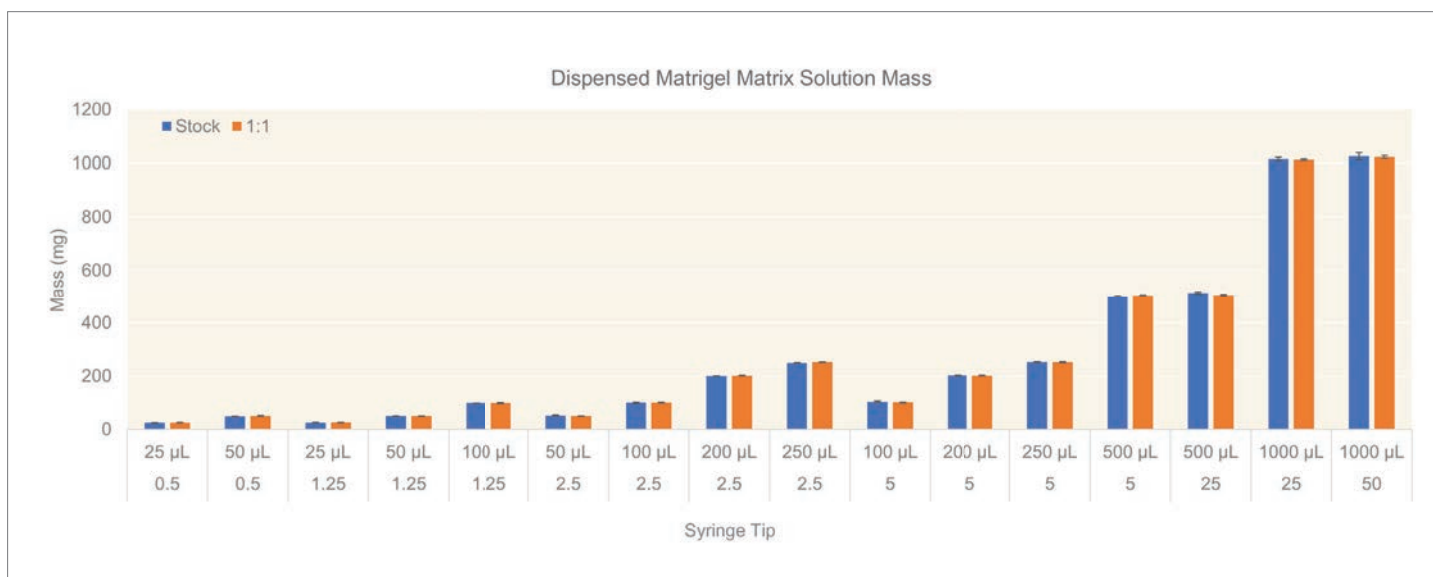
### Corning Matrigel Matrix

Matrigel matrix (Corning Cat. No. 354230) ships frozen and should be stored at -20°C until ready to use. Thaw Matrigel matrix overnight at 4°C on ice until ready to use. Pre-chill syringe tips, plates, and other consumables that will come in contact with Matrigel matrix at 4°C before beginning work. Remember to keep Matrigel matrix stock and dilute solutions cold until ready to polymerize. All work should be conducted in a biosafety cabinet using aseptic technique with sterile consumables and reagents.

1. In a centrifuge tube or reagent reservoir, dilute the stock Matrigel matrix with cold cell culture medium to a specific working concentration. Prepare extra volume of working solution to accommodate discarding the first and last dispense step.
2. Insert the syringe tip into the Step-R pipettor unit and click the lever to lock it in place. If using the 25 or 50 mL syringe tip, attach the proper adapter to the syringe tip before insertion into the Step-R pipettor.

**NOTE:** Use a syringe tip of enough volume (with the correct step size for the dispense volume) to minimize the amount of times the syringe tip requires refilling.

3. Set the dial to the correct volume for dispensing.
4. Slowly draw up the Matrigel matrix solution, keeping the syringe tip in the solution as long as the solution is filling the syringe tip.
5. Dispense the first step (see Step 1) into the source container to prime the syringe tip, then slowly dispense each step to the bottom of each well.
6. If necessary, repeat Steps 4 and 5 to fill all wells.



**Figure 1. Mean dispensed Matrigel matrix solution mass.** Stock Corning Matrigel matrix I (approx. 8 to 10 mg/mL) and Matrigel matrix diluted 1:1 with Dulbecco's Modified Eagle's Medium (DMEM) were dispensed via multiple syringe tips into a reservoir for a total of 5 dispenses per volume. The mass of the dispensed volume was measured after each dispense. Bars = mean ± SD.

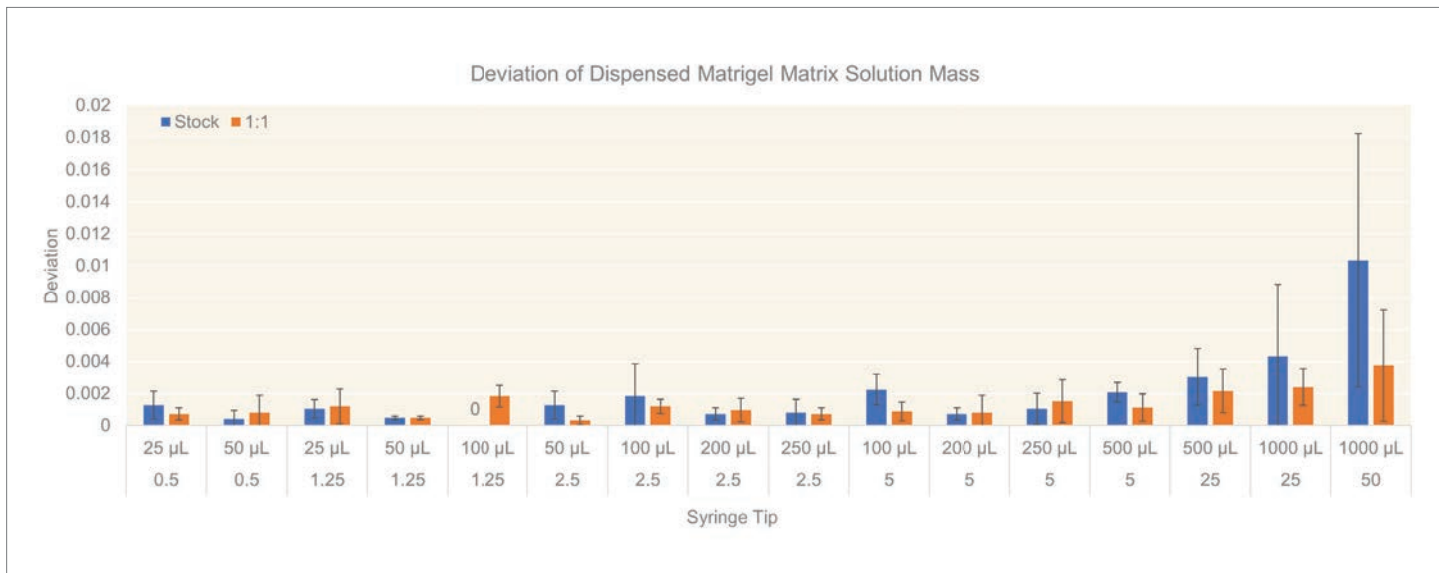


Figure 2. Mean absolute deviation of dispensed Matrigel matrix solution mass. Deviation was calculated as: |Average dispense mass – single dispense mass|. Bars = mean ± SD.

## Conclusions

- ▶ The Corning Step-R repeating pipettor supports accurate dispensing of Matrigel matrix of different viscosities with a large range of dispense volumes.

## References

1. Corning Step-R Repeating Pipettor (Corning Lit. Code CLS-AN-511).
2. Guide to Pipetting Challenging Liquids (Corning Lit. Code CLS-EQ-134).
3. Corning Matrigel Matrix Frequently Asked Questions (Corning Lit. Code CLS-DL-CC-026).

For more specific information on claims, visit the Certificates page at [www.corning.com/lifesciences](http://www.corning.com/lifesciences).

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