

Potting Compounds

This application guide describes the equipment and processes recommended for applying MG Chemicals' 1-part and 2-part potting compound products. It is the user's responsibility to determine the chemical, mechanical and thermal compatibility of substrates prior to using any of the suggested methods.

Epoxy potting compounds can be applied by hand mixing, meter mixing, or with the help of MG Chemicals' dispensing guns and static mixers.



Substrate Preparation

Many defects result from the presence of moisture, grease, oil, dirt, flux, and other board contaminants. Therefore, it is highly recommended that the user ensures the cleanliness and dryness of a surface prior to potting.

1. Put on disposable gloves and clean the surface with MG's 824 Isopropyl Alcohol or any other degreasing solvent.
2. Let the surface dry completely. Elevated temperatures can accelerate drying.

Crystallization/Solidification

Crystallization is the formation of solid crystals, and is common in epoxy resins. Over time the crystals may settle, causing the material to be more dense or harder at the bottom of the container. They may appear as tiny particles or cloudiness in clear resins. This phenomenon does not indicate that the material is defective, and it is easy to reverse.

If crystallization occurs, reconstitute the product by warming it to between 55 and 65 °C until it becomes fully re-liquified. Let the material cool to room temperature before mixing to prevent flash cure.

When dealing with large production volumes, contact MG Chemicals Technical Support for assistance. See Table 1 for the recommended amount of hand-mixed batches.

Cat. No.	Max. Amount for Hand-Mixed Batches
9510	Not applicable
832B	500 g
832HD	500 g
832C	500 g
832WC	500 g
832FX	500 g
832HT	500 g
832TC	3 kg
834B	1 kg
834HTC	1 kg
834FX	1 kg

Table 1. Mixing more than the amount indicated in the table above decreases working time and can lead to flash cure.

Mix Ratios and Working Time

Estimate the part A and B volumes that will be needed for the potting application prior to mixing. To avoid waste, mix required epoxy amounts only when ready to encapsulate components. Ensure the material is used and applied within the working time. If the working time is exceeded, the material will begin to gel or harden.

See Table 2 or the product's TDS for the appropriate mix ratios and working times of MG Chemicals' epoxy potting compounds.

Cat. No.	Mix Ratio by Volume (A:B)	Working Time (min)
9510	1-part	Unlimited
832B	2:1	60
832HD	1:1	45
832C	2:1	60
832WC	2:1	60
832FX	1:1	150
832HT	1.6:1	60
832TC	1:1	120
834B	2:1	60
834HTC	5:1	90
834FX	1:1	150

Table 2. Mix ratios and working time of MG Chemical's products.

Hand Mixing

Pre-Heating (Optional)

Pre-heating results in lower viscosity for easier mixing and faster de-airing; however, it will reduce the working time. To pre-heat, place individual parts into an oven at 65 °C for 90 minutes.

Pre-Stirring

Failure to properly stir individual parts before mixing them together can cause surface defects, degrade the cured properties, and even cause cure failure. Furthermore, improper pre-stirring of parts can result in inaccurate mix ratios.

1. Ensure that the individual parts are homogeneous by thoroughly mixing and scraping settled material from the bottom and sides of the part A and part B containers.
2. Use a paint shaker if available.

Mixing Parts A and B

1. Measure the appropriate amount by volume of part A and pour into the mixing container. See product's TDS for mix ratios and working times.
2. Close the part A and part B containers tightly between use to prevent skinning.
3. Ensure all contents are transferred by scraping the container. To avoid cross contamination, use different mixing tools for parts A and B.
4. Repeat steps 1 and 2 for part B.

5. Thoroughly mix parts A and B together until homogenous. Avoid introducing air bubbles by gently stirring in one direction.
6. To de-air, let mixture sit for 15 minutes, or place in a vacuum chamber at 25 inHg for 2 minutes, or until bubbles are removed.
7. If bubbles are present at the top, break them gently with a mixing tool.

Potting Components

1. Pour the mixture into an enclosure holding the components to be protected.
2. Cure the mixture at the appropriate cure schedule. See the product's TDS.

Dispensing Accessories

MG Chemicals' dispensing accessories facilitate mixing, which makes the application process easier and more efficient. Static mixers eliminate the need for hand mixing. Potting compounds can be applied by hand, dispensing gun, or pneumatic applicator. Some of MG's pottinig compounds are also available in dual cartridge format.

Consult the Dispensing Accessories Catalogue when selecting the appropriate accessory for each product.

Dispensing Guns and Cartridges

Cartridges require manual dispensing guns or pneumatic applicators to dispense material. Dispensing guns are not required for MG Chemicals' 25 mL dual syringes.

8DG-30-1 and 8DG-50-1-1

Assembling the Gun

1. Lift the hinge all the way up to the top of the gun.
2. There is a tab located at the back of the gun. Push this tab up and hold it there.
3. Insert the piston all the way through the front of the gun, with the grooves facing down.
4. When the trigger is pulled, the piston moves forward. To return the piston to its original position, push up the tab on the back of the gun and pull the piston back.

Assembling the Cartridge in the Gun

1. Ensure that the gun is properly assembled with the piston fully retracted.
2. Lift the hinge on the top of the gun and insert the cartridge through the slot.
3. Once the cartridge is in place, close the hinge on the top of the gun over it.

For video instructions, click [here](#).

8DG-400-1-1 and 8DG-450-2-1

1. Ensure that the piston is fully retracted by pulling it all the way to the back of the gun.
2. Insert the cartridge into the gun through the slot.
3. When the trigger is pulled, the piston moves forward. To return the piston to its original position, pull it back.

For video instructions, click [here](#).

Static Mixers

Mixing tips are disposable and for single-use only. Do not store cartridges with mixing tips still attached because the material in the tip will cure.

8MT-450

1. Remove the ring cap and plug from the cartridge nozzle. Do not discard ring cap and plug.
2. Attach static mixer and place the ring cap back over the static mixer.
3. Dispense and discard 20 to 30 mL of the product to ensure a homogeneous mixture.
4. To stop the flow, pull back on the plunger.
5. Dispose of static mixer and clean nozzle to prevent contamination and material buildup.
6. Replace plug and ring cap on the cartridge.

8MT-25, 8MT-50 and 8MT-50FT

1. Twist and remove cap from the cartridge or syringe. Do not discard cap.
2. Dispense a small amount from the cartridge to ensure even flow of both parts.
3. Attach static mixer and turn clockwise to lock.
4. Dispense and discard 5 to 10 mL of the product to ensure a homogeneous mixture.
5. To stop the flow, pull back on the plunger.
6. Dispose of static mixer and clean nozzle to prevent contamination and material buildup.
7. Replace the cap on the cartridge or syringe.

Disclaimer

This information is believed to be accurate. It is intended for professional end-users who have the skills required to evaluate and use the data properly. M.G. Chemicals Ltd. does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

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