



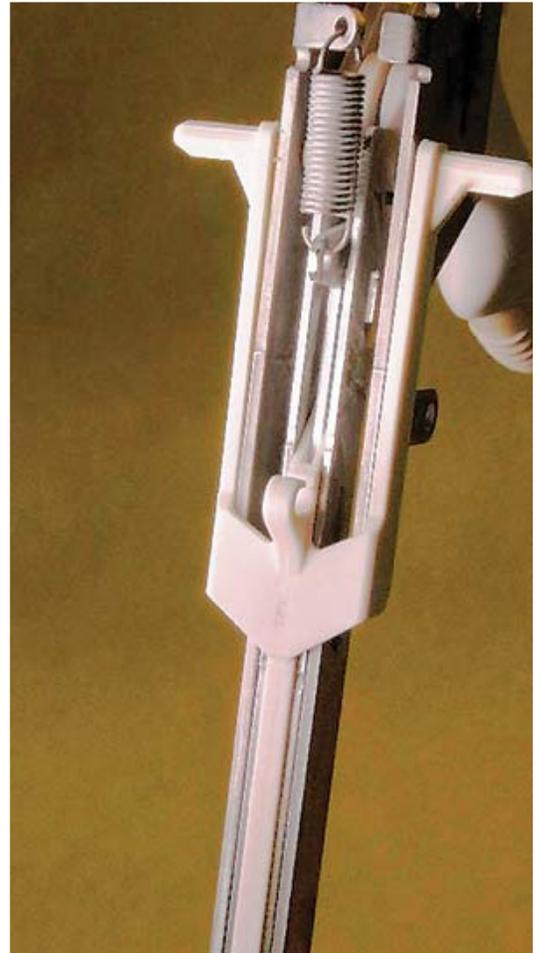
HOW TO TECH PAPER: The Easy Application of Dry Lubricants to Medical Devices

Many engineers understand the benefits of a dry lubricant, but are not aware of the numerous, simple ways the lubricants can be applied. In all cases, you should consult your coatings provider for a recommendation on which process is best for your particular application.

Here is an overview of the different application methods:

Dipping

Most commonly used in high volume production and suitable for coating small parts, coils of wire, and irregular shapes. Dipping provides a consistent and uniform coating to virtually any surface geometry as well as internal surfaces. Fully finished devices also may be dipped into a PTFE-carrier fluid dispersion. The coating level is determined by the concentration of solids, rate of withdrawal, and number of applications. A single dip is adequate for most uses.



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Wiping or Brushing

Useful for coating continuous surfaces such as rods, tubing, or sheets. In addition, wiping and brushing are appropriate for coating small, selected areas of a larger part. One variation of this method is flood coating, followed by wiping.

Air Spraying

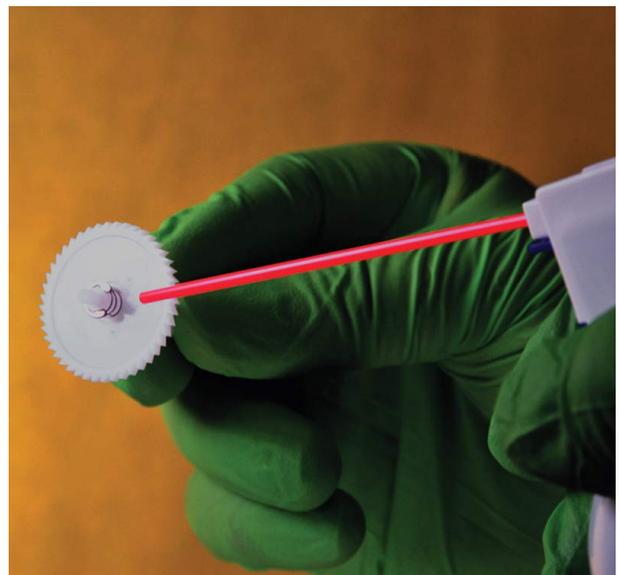
Spray equipment can be used to apply dilute dispersions. A carrier fluid engineered with slower evaporation may be specified to ensure a consistent coating.

Air-less Spraying

Applied with a hand-held spray gun or with automatic spray heads. Operation can be either intermittent or continuous. Typically, the technique is to apply a succession of thin coats, allowing the surface to dry between applications. Results from this technique are typically better than the application of a single thick coating, which can take longer to dry and can cause “mud cracks,” uneven coverage and poor adhesion.

Aerosol Sprays

Allows convenient surface application and quick coverage. Ideal for use on injection mold tooling. Some aerosol sprays have very tight spray patterns enabling pin-point lubrication, which is helpful for hinges and pivot points. Many aerosol sprays also contain other additives to impart special properties making them unacceptable for medical device applications..



Drying

All coatings dry best in areas that are free of dust. Drying times of coatings are dependent on carrier fluid and thickness of application. Increasing the temperature of the treated part may reduce drying times especially on the internal surfaces of complex assemblies.

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Heat Curing

In some applications a more durable coating is desirable. PTFE dry lubricant coatings can be made more durable through melting the coating to “fuse” it to the substrate. Heating turns many dry lubricants completely clear, so it appears nothing is on the surface of the device. This is particularly helpful if the coating needs to be semi-permanent, or if it needs to be invisible on the device.

About the Author —:

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About MicroCare —

MicroCare Corporation is the manufacturer of the many cost-effective, environmentally-sensitive chemical products and tools used for critical cleaning, coating and lubrication. Since 1983, MicroCare has been helping customers to improve their products and processes in industries as diverse as electronics, metal finishing, transportation, medical devices and aerospace. MicroCare constantly innovates to help companies lower their costs and improve their quality.

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