What is a Release Agent Coating? A coating that imparts "non-stick" properties to the surface upon which it is applied. There are many such coatings available, but very few which can be easily applied and removed that are also compatible with the vacuum metallizing environment.

Why would a metallizer use a Release Agent Coating? Primarily to aid in the removal of built up deposits of evaporant from the chamber walls, fixtures, standoffs, and buss bars. The objective is to reduce the need for dangerous, messy caustic cleaning and time-consuming, damaging sandblasting. Occasionally these coatings are used as a masking agent for parts, but we do not promote or encourage this practice.

How do these Release Agent Coatings affect metallizing? The ideal coating would have no effect on the metallizing operation. We have chosen coating formulations with solids that are stable and inert, even at elevated temperatures. The liquid carriers are non-flammable and leave no residue. The coatings should be thoroughly dry, however, before submitting them to vacuum. If wet, these coatings will outgas under vacuum yielding dark shots on parts.

How are these coatings applied? The coatings can be painted on by brush or roller or they can be sprayed. Any necessary thinning can be done with water and/or alcohol. The coatings should be stirred or agitated periodically during application to prevent settling. Care must be taken not to apply the coatings too heavily. Heavy coatings take longer to dry and may peel or flake, contaminating parts.

How do I remove deposits from a surface coated with one of these coatings? Deposits can be easily removed physically by scraping or wire brushing. Extremely heavy deposits can simply be broken off. Follow with a thorough vacuuming to remove dust and particles generated. Surfaces will then need to be recoated for future protection.

What are the active ingredients in the coatings? MTS supplies two basic formulations. The first a boron nitride ceramic based. It is white in color. The second is graphite based and is dark gray. The particle size and liquid carrier have been chosen carefully for optimum performance.

Are the coatings permanent? Once applied, the coatings will remain in place unless disturbed. When evaporant deposits are removed, some of the non-stick coating will be removed also. Thus, the coating will need to be reapplied after cleaning.
**Why not just use a strippable coating such as is used in a paint booth?** Booth coatings create a pliable film that can be peeled away. Such coatings use plastic resins, plasticizers, and solvents that will outgas under vacuum. They can also trap air bubbles. The end result is contamination that will discolor metallized coatings. If left in place long enough, the coatings will become brittle and either flake off or harden in place because all the plasticizers have been extracted from the coating during exposure to repeated vacuum cycles.

**Are any special precautions required when applying, using, or stripping these coatings?** The solids and binders are essentially non-toxic, but the solids can create a nuisance dust hazard during application and removal. As such, a dust mask should be worn when applying or removing the coatings. Latex or nitrile gloves are recommended also to prevent possible skin irritation and for ease of clean up. An MSDS for either coating is available.

*If you have further questions about these coatings or are interested in purchasing, please contact us.*

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**Frictional Properties of Various Solid Lubricants**

![Frictional Properties Graph](image)

- **Talc**
- **Moly Disulfide**
- **Graphite**
- **Boron Nitride**

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