



LAMINATION TOOLING

Serving the P.C. Industry Since 1977

TUF-LUBE 3C® CONCENTRATE HIGH TEMPERATURE RELEASE AGENT

PRODUCT DESCRIPTION

TADCO's Tuf-Lube 3C® is a versatile and effective water-based release agent. It is unique in that its releasing properties are obtained through means of dry film lubrication.

Tuf-Lube 3C® is a non-silicone, semi permanent, external release compound used in the lamination of printed circuit boards. Its application is found as a release coating for the easy removal and cleaning of multilayer lamination and separator plates. The diluted Tuf-Lube 3C® performs as a solid release coating, separating the resin from contact surfaces. The releasing properties of the Tuf-Lube 3C® will provide quick and effective plate parting and cleaning.

Tuf-Lube 3C® is composed of a highly concentrated, white-colored polymer dispersed in a water-based system. It is designed to be diluted with water prior to use for excellent economy. Upon evaporation of the water, a dry lubricious film remains providing easy release of epoxy from the lamination and separator plates.

As a liquid, Tuf-Lube 3C® provides ease of application using both manual and automated methods. Upon application, the water solvent will evaporate rapidly (particularly from warm plates), providing uninterrupted manufacturing operation. The resulting film will adhere to the plates and not the resin material, thereby eliminating part contamination. It withstands exposure to high temperatures in excess of 350°F without deterioration. Tuf-Lube 3C®'s durable coating provides multiple releases for many operations before reapplication is necessary.

**TUF-LUBE® 3C – SAFE TO HANDLE – NONHAZARDOUS – NONFLAMMABLE
NO SILICONE – ENVIRONMENTALLY FRIENDLY – WATER-BASED
DOES NOT CONTAIN ANY INGREDIENTS REGULATED UNDER OSHA 29 CFR 1910.1200**

Application Recommendations

Tuf-Lube 3C® is concentrated and requires water dilution before use. The initial dilution ratio recommendation is 1:4 (Tuf-Lube 3C® to water) and can be further adjusted for the desired optimum performance. It mixes readily with most types of water, however, **de-ionized water is recommended**. A daily light stirring of the dilution will assure uniformity of the product in use.

For best results and adhesion, the plate surface should be cleaned of all contaminants and traces of resin or other release agents prior to application

Auto Application:

Tuf-Lube 3C® can be applied using auto application equipment such as the TADCO Plate Mate Sr® or Jr®.

Manual Application:

For best results, apply with a lint-free cotton cloth. Wipe the separator plate with a very fine coating of Tuf-Lube 3C®. Do not over-apply the product. A very light coating is recommended. Allow the plates to dry prior to resuming the lay-up and lamination process. *Do not touch any innerlayer materials without first cleaning your hands.*

Cleaning:

For cleaning and removal of Tuf-Lube 3C®, process the stainless steel or aluminum separator plates through a water-based plate scrubber, such as TADCO's Plate Mate Sr.®

Physical and Chemical Properties

Physical form	Liquid	Vapor density	Not established
Color	White	Vapor pressure	Not established
Odor	Sweet	% volatile by weight	78-80
Bulk density	8 lbs/gal	Boiling point	212°F
Specific gravity	<1	Melt point/Freeze point	Approximately 32°F
Flash point	Does not burn below 200°F	PH	n/a
		Solubility in water	Disperses