



## Painting

### Paint Selection

The primary consideration in selecting a paint or coating for an Attabox part is the compatibility of the solvent system with polycarbonate. The solvent should evaporate easily and leave the part completely. In general, water-base and solvent paints based on aliphatic hydrocarbons (mineral spirits, heptane, hexane and alcohols) have good compatibility. Chlorinated and aromatic solvents, as well as ketones, should generally be avoided, although they may sometimes be used in other solvent systems as adhesion promoters to etch the surface. Paints should be tested for chemical compatibility before use to determine if they will craze, crack or weaken the substrate.

Paint selection for all applications, and especially where impact is a consideration, is dependent upon both the desired surface appearance and the effect it has on the end-use performance of the substrate. Successful results with this process will be dependent upon proper surface preparation. It is also important to obtain paint recommendations specifically for LEXAN resins from the equipment or ink supplier.

It is important to follow the procedures listed below prior to painting LEXAN resin part:

1. Check that spray equipment air lines are free of water or oil.
2. Check for dust, since an accumulation of particles can make it difficult to obtain a smooth, blemish-free finish. If necessary, dust particles can usually be blown off with an ionizing gun. (Antistatic agents applied immediately after molding have also been successfully used where needed.)
3. Do not use mold release.

If the LEXAN resin part is clean, special surface preparation is generally needed before painting. If the surface has become contaminated, either wipe the part with alcohol or clean ultrasonically.

### Curing

Paints used on LEXAN resin can be cured using either air-dry or bake techniques. Circulating warm air ovens are the most economical method of drying. Curing conditions will vary depending on the coating and part design. Bake temperatures of 250°F (121°C) are acceptable for most standard grades of LEXAN resin. Any assembly operation which induces stress on a part should be performed after painting.

### Chemical- and Scratch-Resistant Coatings

Several chemical- and scratch-resistant coatings have been developed for transparent plastics. These coatings have glass-like optical qualities and offer a significant improvement in chemical and scratch resistance over uncoated resin. Licensed coating technology is available for use on parts made from LEXAN resin. Royalties may have to be paid to the appropriate company when their technology is used; therefore, each supplier should be contacted prior to selection. In addition, several clear scratch-resistant coatings are commercially available that have been used successfully on LEXAN resin parts. These differ in chemical and mar resistance as well as ease of application.

Surface hardness determines the scratch resistance of coatings. If the coating is applied in too thick a section, it can reduce impact resistance by initiating a notch in the surface coating which can propagate into the LEXAN resin part. Chemical- and scratch-resistant coatings must also be evaluated for compatibility, effect of environmental exposure, adhesion, effect upon impact resistance of the molded part and, ultimately, effectiveness under actual operating conditions.

### Trouble Shooting

Cracking and crazing - Incompatible paint

Orange peel, blistering - Improper thinning; incompatible paint; too rapid a cure.

Pin holing - Static build-up; surface contamination; too thick a paint.

Lack of adhesion - Poor choice of paint solvent system; surface contamination.

Surface imperfections or roughness - Surface contamination; dirt in air lines; static build-up.

Coating embrittlement and/or discoloration - Too high a cure temperature; too long a cure time.

Fish eyes- Poorly prepared or contaminated surface.

Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question and is further advised against relying on the information contained herein or previously represented as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the product is suited and the information is applicable to the user's specific application. ATTABOX LLC does not make, and expressly disclaim, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained herein, previously represented or the product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein, previously represented or the product itself. Further, information contained herein or previously represented is given without reference to any intellectual property issues, as well as federal, state or local laws which may be encountered in the use thereof. Such questions should be investigated by the user.