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## Methods to reduce the mixed viscosity

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It is best to purchase products that are formulated to yield the required viscosities to accommodate the processing. In certain cases however, it may be desirable to lower the viscosity of a given epoxy or polyurethane system to improve its handling characteristics. **It must be considered that all deviations from the recommended handling will result in some form of trade-off.**

The following are ways to reduce viscosities:

1. **Warming the mixed material.** Viscosities decrease quickly with the application of heat. Two of the most significant trade-offs will be shorter pot life and faster set up time.
2. **Warming the resin only.** This will lower the resin viscosity and make mixing easier. The resultant trade-offs will be the same as above, only to a lesser extent, since the hardener is cooler.
3. **Warm the hardener only. This is the least desirable** since many hardeners contain at least some volatile components and the volatility of these components will become more severe with the application of heat. The same trade-offs will apply complicated by possible cosmetic defects caused by the volatile ingredients.

Diluted resins are employed in some formulations in order to increase filler loading and reduce costs. There are two types of diluents that are commonly used for this purpose. **Reactive diluents** which, as the name indicates, are part of the reaction during the curing process and **Non-reactive diluents** which lower the viscosity but do not take part in the actual reaction. Depending on the type of diluent employed, if any, may cause surface defects as the resin is warmed to reduce the viscosity. **It is best to check with the supplier to ensure that there are no problems with heating material components to reduce viscosity.**

**Make certain that there is good ventilation present when heating any Epoxy or Polyurethane components and that any residual fumes are drawn away from the operator. Observe all precautions on the manufacturer's MSDS.**

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