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MODIFICATION OF ROUND BOTTOM FLASKS TO ALLOW COMPLETE REMOVAL OF CONTENTS BY SYRINGE

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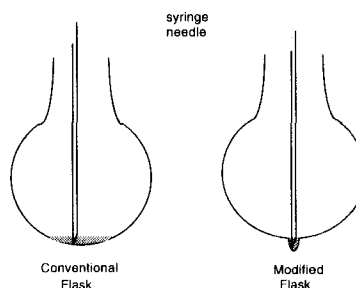
MODIFICATION OF ROUND BOTTOM FLASKS TO ALLOW COMPLETE REMOVAL OF CONTENTS BY SYRINGE

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(02/03/97)

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In the course of conducting organic synthesis, transfer of a solution from a flask *via* syringe is often required. If the solution is in a typical round bottom flask, it is virtually impossible to transfer all of the solution using a syringe equipped with a standard needle (the type which are most useful for piercing septa) since when the tip of the needle is on the bottom of the flask, the core of the needle remains a millimeter or so above it. The use of "pear-shaped" flasks greatly improves this situation, though smooth stirring with normal octagonal stir bars is difficult with these flasks. Although special stir bars have been designed to cope with this problem, it would be more convenient if one could use regular octagonal stir bars.

A method of modifying a normal round bottom flask has been developed which alleviates these problems. Though the solution is quite simple, I am unaware of such a modification having been described previously. One simply heats a small spot on the bottom of a round bottom flask using a glassblowing torch, and then, when the glass is soft, a small indentation is made in the bottom of the



flask using a pencil (in the same manner in which one creates the "dimples" of a Vigreux column). The entire operation takes only a few minutes. The indentation is small enough that it does not interfere with the normal spinning of even small octagonal stir bars, yet is just large enough for a syringe needle to fit inside. As the bottom of this dimple is the "low point" of the flask, all but one drop of a solution can be removed *via* syringe (see figure). These flasks have been found to be quite useful for preparing solutions which need to be transferred without exposure to the air. Additionally, this modification does not appear to weaken the flask appreciably, as they have been used frequently in our lab, and none have been lost to breakage. Since the dimple does represent an area of higher stress in the glass, it is however advisable to support these flasks by their necks.

In summary, normal round bottom flasks can be quickly and easily modified so that solutions can be almost completely removed by syringe. The contents of these modified flasks can be stirred evenly using normal octagonal stir bars.