

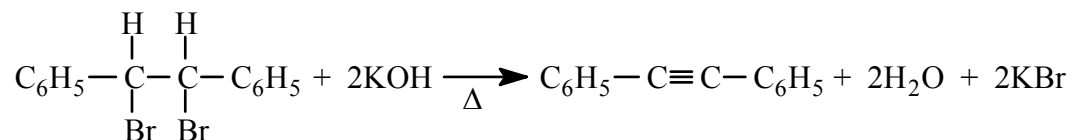
## Unit 4M: Introduction to Organic Synthesis IV

## Preparation of Diphenylacetylene (Last updated 08/18/04)

This assignment is due at the beginning of your recitation section one week before the day that you are scheduled to perform this experiment. It is in your best interests to complete these exercises as far in advance as practical. It is not in your best interests to wait until the day you have lab.

To receive a satisfactory grade your answers must be presented clearly. Looks count. Do your preliminary work on scrap paper. You can find data about the physical properties of the compounds in question in an Aldrich catalog, copies of which are available in rooms 152 and 363 of the Science building.

In the **Introduction** to this Unit, the dehydrobromination of *meso*-stilbenedibromide was described in general terms by the following equation:



1. Complete the following table:

Compound	Formula Weight
<i>meso</i> -stilbene dibromide	
KOH	
diphenylacetylene	

2. The experimental procedure calls for you to use  $1.0 \pm 0.1$  mmol of *meso*-stilbene dibromide. What mass range does this correspond to? Show your work for the minimum mass.

Minimum mass = \_\_\_\_\_ mg

Maximum mass = \_\_\_\_\_ mg

3. What mass range of KOH does the procedure call for? Show your work for the minimum mass.

Minimum mass = \_\_\_\_\_ mg

Maximum mass = \_\_\_\_\_ mg

4. KOH is sold as pellets that contain 15% water. What mass of KOH pellets should you use to obtain the mass of KOH you calculated in question 3? Show your work for the minimum mass.

Minimum mass = \_\_\_\_\_ mg

Maximum mass = \_\_\_\_\_ mg

5. Draw the structure of triethylene glycol.

6. What is the boiling point of triethylene glycol? \_\_\_\_\_ °C

7. What is the theoretical yield of diphenylacetylene that is possible from the quantities of *meso*-stilbenedibromide calculated in question 2? Show your work for the minimum theoretical yield.

Minimum yield = \_\_\_\_\_ mg

Maximum yield = \_\_\_\_\_ mg