

THE BAKER COMPANY

The Use of Flammable Gas in a Biological Safety Cabinet

The Baker Company places warning labels against the use of flammable gas on all of our Biological Safety Cabinets (including the models SterilGARD, BioGARD, NCB, IsoGARD) and other containment enclosures. The National Institutes of Health (NIH) specifications alert people to the fact that biological safety cabinets are not chemical fume hoods (CDC/NIH Primary Containment for Biohazards, Selection, Installation and use of biological safety cabinets, September 2000) and should contain no flammable gases.

Many Biological Safety Cabinets (BSCs) recirculate a portion of their total air volume by definition and intent. This recirculated air travels over electrical components that are not rated as explosion-proof and therefore are not suitable for a flammable atmosphere. Flammable gasses and vapors, which are not captured by HEPA filters, may build up to concentrated levels within the recirculated air that may achieve their lower explosive limits (LELs). Because the electrical components are not designed for explosive atmospheres, there is a very real danger of explosion. Underwriter's Laboratory (UL) requires a warning label against the use of flammable gasses on all UL listed cabinets.

The Baker Company offers gas petcocks as options for our BSCs. BSCs have a wide range of applications including patient care, research, tissue culture, and animal research. Many laboratorians use various non-flammable gasses as part of their work and some use a vacuum connected petcock.

The Baker Company is aware that some institutions have approved the use of Bunsen burners within biological safety cabinets. This is a decision by the safety officer at the institution and is based on a risk assessment under local conditions. These facilities usually incorporate a protected pilot light, braided hoses, and shut-off valves located outside of the cabinet as additional safety precautions.

The Baker Company does not endorse the use of flammable gasses within BSCs under any conditions. There are alternatives to open flames such as small electrical incinerators, use of disposables, and proper aseptic technique.

The Baker Company believes that the best solution to this problem is the elimination of flammable gas use within BSCs and the adoption of alternative aseptic techniques.