

Flame Retardant Tents May Be Dangerous

By Arlene Blum

A recent article on tent safety in the *Sierra Club Newsletter* recommends the purchase of flame retardant tents whenever possible; self-regulation by the tent manufacturers has resulted in the production of only flame retardant tents. From the point of view of limiting fire deaths, this is progress but, like many other technological advances, treatment with chemical flame retardants has high costs that may not appear immediately obvious.

To make fabrics flame retardant, chlorinated and brominated organic compounds are added in amounts as great as 20% of the total weight of the fabric. These sort of compounds are toxic in animals, mutagenic, and may cause cancer. Until recently, no efforts have been made to assess the biological effects of exposure to such compounds and their disposal into the environment. Since the retardants may contain up to 10% volatiles when applied to the fabrics, this means that while you are sitting or sleeping in a relatively new tent you may be breathing toxic vapors.

For example, "Tris" [tris-(2,3-dibromopropyl) phosphate], the favored retardant for many synthetic fibers, has recently been shown to be a mutagen and suspected carcinogen. The fact that children's sleepwear treated with tris may be cancer-causing was the subject of a CBS evening news report in late March.

Since tents carry no indication of the sort of flame retardant chemical used, there is no way of making sure that the tent you buy was *not* treated with such a suspected cancer-causing substance.

Furthermore, the necessity for retarding nylon tents is dubious. Robert F. Johnson in the Department of Textile and Clothing Consumer Studies at the University of Minnesota has documented 75 tent fires causing 119 injuries in the United States during the 4 years between 1970 and 1974. None of the tents causing injuries were nylon. Only 2 of the 75 fires reported in the study involved nylon tents, and both were non-injury fires.

Chemicals used to treat clothing and tents (as well as rugs, curtains, mattresses, mattress pads—items now covered by legislation requiring flame-retardancy) should be characterized biologically *before* their use. This is not now being done.

In addition to the biological hazard, flame retardants markedly increase the weight and cost of tents. Comparing weights of treated and untreated identical tents in the 1975 North Face catalog showed the flame retardants increased the weight of the tent from 15 to 22%. There is a corresponding decrease in fabric tear strength, making treated tents unsatisfactory and possibly unsafe for use by backpackers and mountaineers under exacting conditions. The American Bicentennial Everest expedition had difficulty obtaining non-treated tents for the extremely severe conditions high on the mountain because the only fabrics available to the manufacturers are treated with flame retardant chemicals.

Meanwhile, what to do? Of course, you should follow common safety precautions (such as not refilling a hot stove inside a tent). Write to tent manufacturers and legislators stating your belief that all compounds used to treat tents be biologically and environmentally safe.

A Federal standard for tent safety is currently being established by the Consumer Product Safety Commission, a group very responsive to public opinion. If you are concerned about having to use tents that are heavier, less strong, more expensive and treated with chemicals that may cause cancer, write Office of the Secretary, Consumer Product Safety Commission, Washington, D.C. 20207. Say that as a backpacker or climber you would be safer with lighter, stronger, untreated tents than with chemically flame retarded tents; that nylon backpacking tents should be exempt from the tent flammability standards.