

Carcinogen Benzene still used

By KEVIN BACKS
Staff Writer

Of 11 universities across Canada and the United States contacted by THE BRUNSWICKAN in the past few days, University of Saskatchewan and Memorial University of Newfoundland are the only two using the controversial chemical, benzene in undergraduate chemistry labs. UNB stopped using the compound as of the beginning of this academic year.

Recently the University of Winnipeg newspaper, The *Uniter* published a story in which they announced that benzene had been dropped from its undergraduate chemistry laboratory assignments. The removal of benzene came after student protest, because benzene is a proven carcinogen in humans; that is, benzene has been proven to cause cancer in human beings. The *Brunswickan* called Dr. Barth, Chairman of the chemistry department at the University of Winnipeg. Dr. Barth made an effort to shed light what he termed a very complex problem. He told the *Brunswickan* that part of the problem at the U of W could be fume hoods not working properly. He did stress that the Manitoba Provincial Health Department had investigated and found the levels of benzene in the labs to be well below those considered to be dangerous.

While Dr. Barth said he knew other universities still use benzene in their programs, he felt us of the substance, as with any dangerous chemical, must involve caution. He said that U of W had been in the process of phasing benzene out of the program for undergraduates. He said thanks to better detecting equipment and more awareness on the part of the teaching staff, students would probably have had only about one-twentieth the exposure he received in his undergraduate studies.

Maurice Coombs, a supervisor in the chemistry department at the University of Toronto, informed us that benzene had been phased out of the teaching labs without any pressure from outside the university. He said the dropping of benzene was due to its carcinogenic qualities.

Coombs said U of T felt they had a "moral obligation" to stop exposing undergraduate students

to a chemical proven to cause cancer. One problem he pointed out was the inability of the teaching staff to prevent abuse of chemicals in their labs. The main danger in the use of benzene is that of long-term exposure to large quantities of the compound.

The levels of exposure considered harmful are 10 parts per million (PPM) over an eight-hour period with 25 PPM being the uppermost level for a working environment. Fifty PPM would be considered harmful after only 10 minutes. These figures were supplied in a telephone interview by Steve Evans, a member of the chemistry department at the University of California at Los Angeles. They are from a recent copy of the Merck Index, a compendium of all known chemicals compounds.

Dr. Crawford, chairman of the chemistry department at the University of Alberta doesn't know whether the undergraduate students there realize benzene is a carcinogen. However, the undergrad students don't use benzene in their assignments; rather, they use toluene, which the body gets rid of more quickly and is thus less toxic than benzene. The undergraduate courses in organic chemistry have more than 800 students enrolled.

As a sidelight, Dr. Crawford said, U of A has received a provincial grant to study toxicity and toxicology legislation. Students from the chemistry and law departments will be involved in the study, which will be published for Alberta Universities only. Dr. Crawford did mention the possibility that the document may be published for circulation to other schools across Canada.

Dr. Crawford went on to say that the key factor in this matter in respect of the character of the compound and use of proper judgement in its handling.

"It should be avoided whenever possible, but we should not panic."

He also mentioned that there is more danger due to its flammability than due to its cancer-causing

properties.

Dr. Loukes from University of Prince Edward Island called Wednesday afternoon to inform *The Brunswickan* of the results of a departmental meeting.

The policy of UPEI is such that faculty awareness of the nature of benzene caused them to drop it from undergraduate chemistry labs. They felt that "it is no longer appropriate to use a compound as dangerous as benzene" in labs where students may not be disciplined in the handling of such substances. Loukes explained to us that benzene had never been used in any great volumes in the chemistry department there. The topic of benzene causing cancer had never been officially mentioned to the students. Instead, the faculty of UPEI acted on the information without being pressured by students or the media.

Dr. Newlands, from the chemistry department at Memorial University of Newfoundland, revealed more about the dark side of benzene, saying it has been attributed as the cause of plastic anemia in some people. However, he added, the chances of it happening to any particular person are estimated as less than one in a million. Dr. Newlands said that cleaning fluids containing benzene are on the prohibited list for imported materials. They have been banned by the Canadian government.

In one experiment to do with halogenation of aromatic hydrocarbons, benzene is the only substance they can use. Dr. Newlands said the experiment is done in second-year organic chemistry. If toluene is used instead, the substitution does not take place in the benzene ring, but outside it instead.

Newlands said all organic chemistry students are informed that benzene can cause cancer.

Steve Evans, the UCLA spokesman, said benzene had been dropped entirely from undergrad labs at the start of the spring quarter last year. The removal took place as the result of a story in the UCLA *Bruin*, the students newspaper there. Toluene is being used in most of the experiments where aromatic hydrocarbons are used.

The United States does not consider benzene to be a proven carcinogen, although it is no more common to see it in use there than it is here, according to Evans.

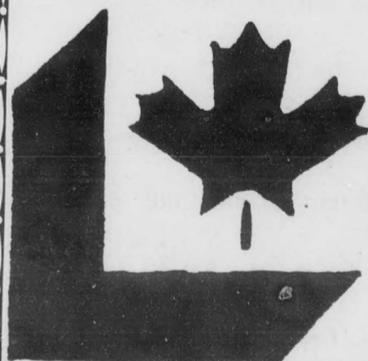
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