WOOD PRESERVATION ENVIRONMENTAL ISSUES UPDATE

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With such a topic – where do I begin? Federal governments – United States, Canada and elsewhere – are focussing much attention on the wood preservation chemicals. As an introduction I will give a brief run-down of current reviews and regulatory actions that could have major impact on the daily business, current research, present livelihood and future directions of those involved in wood preservation.

Pentachlorophenol (PCP), creosote and chromated copper arsenate (CCA), the three major wood preservation chemicals, are under Rebuttable Presumption Against Registration (RPAR), a review process, in the United States. It is anticipated that the Environmental Protection Agency's position document on these chemicals, termed PD 2/3, could be released by the end of December. The document is composed of:

(a) an introductory chapter which reviews the criteria for reviewing the chemicals in question,

(b) a risk analysis which represents the risk situation under status quo conditions on the currently U.S. registered uses of these wood preservatives,

(c) a benefit analysis which represents the impact of total concellation of all uses,

(d) a risk/benefit analysis of each of the regulatory options, and

(e) the recommended regulatory position.

For those of you who use or sell PCP, creosote or CCA, I would highly recommend that a copy of the PD 2/3 document on the wood preservatives be obtained when released, simply for information purposes. The document *does not* represent the final U.S. regulatory position.

Internationally, in early 1981, another review, titled "The Environmental Chemistry of Pentachlorophenol", should be published as a monograph by IUPAC, the International Union of Pure and Applied Chemistry.

In Canada, recent actions by four federal departments could effect the use and movement of wood preservative chemicals. Which departments and what regulatory authorities are involved?

(1) Environment Canada – The Environmental Contaminants Act (1975), jointly administered with Health & Welfare Canada, is an Act to protect human health and the environment from substances that contaminate the environment. In Category II of

Environment Canada's List of Priority Chemicals, under CHLOROPHENOLS, the following appears: "Pentachlorophenol is causing concern because of its toxicity, widespread use and the presence of various by-product impurities in some batches. These by-products include chlorinated dibenzo-dioxins, chlorinated dibenzofurans and the chlorinated diphenyl ethers. Similar concerns exist for the mono- to tetra-chlorophenols." The resultant review document, now in press, titled "Chlorophenols and their impurities in the Environment", will be available about March 1981, from Environment Canada.

Another wood preservative, bis(tri-n-butyltin) oxide (TBTO), an organotin, is also under Environmental Contaminant Act review and is presently listed in Category III. Chemicals move from Category III to Category I as information is collected and evaluated. If a chemical reaches Category I, the government is satisfied that the chemical or group of chemicals pose a significant danger to human health or the environment and then regulations are developed to alleviate the concerns identified. It is up to members of the CWPA and the Pesticides Section, Agriculture Canada to ensure that no wood preservative chemical reaches Category I, and that sufficient action can be taken by Agriculture Canada under the Pest Control Products Act.

(2) Health & Welfare Canada — The Food & Drugs Act. In June of this year, regulation B.01.046 of the Food & Drug Regulations, dealing with the adulteration of food, was amended to include "chlorinated dibenzo-p-dioxins". Thus, *any* food containing *any* residues of *any* chlorinated dibenzodioxin is now considered to be adulterated. What does this mean? Why should it be of concern to the wood treatment industry? Chlorophenols contain chlorinated dibenzo-p-dioxins as microcontaminants. Therefore, any use of tetra- and/or pentachlorophenol or their salts that could result in uptake of dioxin residues by farm animals or food, and thus entry into the food chain, should be eliminated.

Examples:

(a) When constructing farm buildings for animal shelter or feed storage, PCP pressure treated lumber should *not* be exposed to the *interior* atmosphere or surfaces of such buildings; nor should it be used for above-ground applications in such structures.

(b) Chlorophenols should *never* be applied by brush or spray to interior wood surfaces of farm buildings for wood preservation or other purposes.

(c) Wood chips and shavings are used in Canada for poultry and animal litter and bedding purposes. Chemical residues have the potential to enter the food chain via this use.

(3) Transport Canada — the third federal department. In July of this year, the Transportation of Dangerous Goods Act was passed by the House and Senate, and received Royal Assent. It should be proclaimed as law before the end of this year. This Act will promote public safety in the transportation of dangerous goods. Bulk transport of chemicals, e.g., tank cars of creosote, blocks of PCP, containers of CCA, will be

affected by this Act and associated regulations. Labelling regulations and bulk packaging standards for fibreboard, metal and plastic containers are to be promulgated.

(4) Agriculture Canada – The Pest Control Products Act. For those of you who are not already aware, wood preservatives are pesticides and as such are regulated by Agriculture Canada.

I have few comments on the regulatory status of pentachlorophenol as a wood preservative. A re-evaluation of all the uses in Canada of the chlorophenols is in the final stage of completion. A final position has not been taken.

Recently, a number of major policy decisions have been implemented which may or could have a profound impact on your industry.

In accordance with new Departmental Policy established by the Deputy Minister, pesticide registration procedures are now being implemented that are more product specific, rather than generic in nature. These changes will focus initially on the active ingredient or basic chemical, as well as on a more detailed consideration of the formulated product. This initiative is an important first step towards tightening pesticide regulation controls and operational procedures in the interest of greater assurance of the safety and effectiveness of every product registered under the Pest Control Act.

The following paragraphs outline initial operational procedures that have been put in place to implement this new policy:

(1) Status of products already on the market and properly documented new active ingredients will *not* be directly affected.

(2) Most applications received prior to September 8, 1980 will be handled via the previous generic registration policy with the major exception of compounds supported by Industrial Biotest (IBT) data and those under re-evaluation. Applications received prior to September 8 that involve *new sources* of a previously registered active ingredient require special consideration; we are currently developing a proper procedure to accommodate these situations.

(3) For applications received after September 8, 1980, product specific registration (PSR) will at least involve "tying" each individual submission to a basic producer via a manufacturing specification (T-1-223), a data base index (T-1-212) and written confirmation from the basic manufacturer that his specific product and process is the ultimate source of the active ingredient. In many situations, particularly those involving older compounds, (nearly all the wood preservative chemicals are included here) this basic requirement will not suffice since there is no complete data base on file that can be cited as directly associated with the individual manufacturer or basic supplier. In these cases, a full data submission will be required. Subsequent applications will *not* be granted registration unless the applicants can provide or cite a comparable, adequate data package.

In summary, applications made after September 8, 1980 will fall into four categories:

I A complete and current data package will be required for new applications or label expansions that cannot be directly associated by the applicant, or on his behalf by the basic supplier, with an adequate data base already on file that relates specifically to the basic supplier's technical ingredient and manufacturing process.

II In situations where IBT is not implicated and a more modern and adequate data package exists the PSR requirement may be met by a minimum of:

1. "Tying" the specific submission to a basic producer via a manufacturing specification (T-1-223) and data base index (T-1-212) provided either by the formulator or his basic supplier.

2. Written confirmation from the basic manufacturer which verifies his specific product and process as the ultimate source of the active ingredient.

III No new products or label expansions will be accepted for IBT chemicals or compounds under re-evaluation without written agreement from Health and Welfare Canada.

IV Temporary registrations will *not* be extended or advanced to full registration status for any situations covered by category I and compounds supported by IBT data without written agreement from Health and Welfare Canada.

What does all this mean? Let us examine a few examples.

Category I states that a complete and current data package will be required for new applications or label expansions that cannot be directly associated by the applicant with an adequate data base already on file. Our data bases must be updated by the basic manufacturers for pentachlorophenol, creosote, CCA, copper or zinc naphthenate, borax, tetrachlorophenol, etc. nearly all the wood preservative chemicals. Each basic manufacturer, if he wishes to expand his formulator customer market must submit copies of all toxicity data available on *his* product for review. The formulator of a 5% penta product or a 2% copper wood preservative now must submit a series of acute toxicity studies on his particular formulation. The formulator's active ingredient must be "tied" to a specific basic supplier who has an adequate data base on file with Agriculture Canada.

Category III states that no new products or label expansions will be accepted for IBT chemicals without written agreement from Health and Welfare Canada. IBT (Industrial Biotest Laboratories) was a U.S. contract lab used by many manufacturers to develop data supporting pesticide registrations. The quality and integrity of much of the data is highly suspect. Since many pesticides are supported, to one degree or another, by IBT data, the safety of major pesticides is being strongly challenged. TCMTB, folpet, captan, captafol and TBTO . . possible candidate chemicals to replace some uses of the chlorophenols . . . are supported at least in part by IBT data. No registrations for products involving these chemicals will be given until the IBT implication can be resolved.

To make a general statement, I suspect that there will be *very few* registrations issued by

Agriculture Canada for wood preservation products in the next 1 to 2 year time frame. There is a genuine public concern about all chemicals. Most people are afraid of them. Agriculture Canada is attempting to provide some balance. We are making our position on pesticides known. In future, there will be increasing emphasis in the areas of toxicology, occupational and environmental health, and sophisticated micro-contaminant analysis.

In recent years, I am sure that you have observed stiffer questioning and challenges of your products in terms of their potential health effects to formulators, employees, users and the public. These challenges often take the form of increased data demands to establish the safety of your products.

I am sure that you would not wish to see the image of your products or your company or your industry tarnished. Recognizing this situation, there are some initiatives which you may wish to consider:

(1) Companies involved in marketing wood preservative chemicals should have a full and complete information package, including health and environmental aspects, supporting their product. In addition to meeting corporate obligations, such an approach will certainly make review and registration processes with regulatory agencies run more smoothly.

(2) Educate your customers, your employees, the unions and, if possible, the public to the potential health hazards and proper safety handling procedures regarding the use of your products. Know the toxicity of your products and disseminate that information!

(3) Investigate and eliminate potential occupational exposure hazards in the workplace by (a) enforcement of proper use of protective equipment (b) introduction of high or new technology application systems (c) worker education (d) more thoughtful design of lumber mills with safety and the environment in mind *e.g.* treat with antisapstain chemicals *after* the lumber has been graded not *before*.

(4) Investigate the structural properties of wood . . . . fungal degradation, moisture retention, water repellency . . . use such properties to your advantage.

(5) Get involved in dialogue with government. Through associations like the CWPA, express your concerns. Government is very willing to listen, to take action, and to give advice. Through your initiatives, regulations can be changed and guidelines amended.

The regulatory pressure on the wood preservative chemicals is just beginning. The next two years will be difficult ones in terms of meeting registration requirements in Canada. However, I am optimistic. I look upon the future as most challenging and interesting both for wood treatment industry and myself.