

The World Chlorine Council Report is a publication of the World Chlorine Council. It provides updates and information on key issues of interest to the global chlor-alkali industry. Visit the World Chlorine Council website at www.worldchlorine.com.

Issue 3—June 2008

Coming Up For WCC

August 7: Clorosur Latin America POPs Meeting

August 17-23: World Water Week 2008

September 1-5: LRTAP WGSR Meeting—POPs Protocol Negotiations for New Chemicals

October 6-10: UNEP Mercury Open-Ended Working Group Meeting

October 13-17: Stockholm POPs Review Committee—Review of New Chemicals

October 22-23: Joint WCC-GVC-CCAIA China Chlor-Vinyl Conference

October 24: WCC Management Committee and General Assembly

October 26-27: WCC Governing Council Meeting

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The Second International Conference on China Chlor-Alkali and PVC Sustainability

The 2nd International Conference on China Chlor-Alkali and PVC Industry Sustainability will be held in Shanghai on 22-23 October 2008. The event is organised by World Chlorine Council, Global Vinyl Council and China Chlor-Alkali Industry Association in cooperation with Shanghai Chlor-Alkali Chemical CO Ltd.

With the growth of China's economy, the rapid development of China's Chlor-Alkali and PVC industry has increasingly caught the attention of the world. This conference, which will attract more than 100 experts from China and around the world, will focus on chlor-alkali and PVC production, applications, safety, environmental protection and public health. The following topics will be covered during the conference by speakers from China and the WCC and GVC membership:

- current status and future of global chlor-alkali and PVC industry
- energy issues
- emissions reduction efforts
- safe transportation of liquid chlorine
- REACH regulation
- PVC additives
- Sustainability of chlor-alkali and PVC

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Persistent Organic Pollutants (POPs) – The Next Steps Internationally

The World Chlorine Council has been involved for a number of years in the process for assessment of new persistent organic pollutants (POPs) under both the UNEP Stockholm Convention and the UNECE Convention on Long Range Trans-boundary Air Pollution (LRTAP). Through the technical bodies of both conventions, we have made interventions and provided scientific information on nominated chlorinated substances, including pentachlorobenzene, hexachlorobutadiene and chlorinated paraffins.

In the process we have been concerned about the lack of scientific rigor in the assessment process in both conventions, particularly in the failure to establish a basis for the criterion of "the likelihood of significant adverse effects," one of the five criteria that must be met for listing new substances under each convention. When scientific evidence has been provided that emissions of substances are controlled or non-existent, delegates have either openly or implicitly inferred that addition of substances to each convention is needed to address emissions and releases from developing countries or countries in transition.



POPRC-3 participants at work during the Convention (Photo property of the Stockholm Convention on Persistent Organic Pollutants)

These technical review processes are now drawing to a close. The final meeting of the LRTAP Working Group on Strategies and Review will take place in September to finalize text proposals for amending the POPs protocol of LRTAP. In October, the fourth Stockholm Convention POP Review Committee meeting will take place and report to the Conference of the Parties (the decision-making body) in June 2009. At POPRC-4, as at POPRC-3 last year, the voice of delegates from developing countries will carry potentially greater force than was experienced at earlier stages in the review process.



Dolf Van Wijk (left) and Allan Jones (center) represent the World Chlorine Council at POPRC-3 with, on the right, Mark Trewitt, representing CropLife International.

However, at POPRC-4 there will be a significant turnover of representatives, with many representatives starting new terms of appointment. WCC needs the help of its members in communicating our concerns and recommendations to delegates from your country. We look forward to your assistance in the weeks and months ahead.

WCC Prevents International Restrictions on Halogenated Substances

Talks are underway to amend and update the Protocol on Persistent Organic Pollutants (POPs) under the United Nations Convention on Long Range Transboundary Air Pollution (LRTAP).

The World Chlorine Council is participating in the talks and coordinating efforts for the global chemical industry. As part of the talks, a proposal was made to require restrictions on halogenated products or products containing halogenated substances. The claim is that halogenated substances and products, when used or disposed of, will generate byproduct POPs and should therefore be banned or restricted. This would include a broad range of products.

While this claim of "halogen in equals POPs out" is not supported by science or existing government policies, there is a strong push to use this as means to advocate product de-selection efforts. As a result of the chlorine sector's efforts, all proposals calling for restrictions on "halogenated materials/products" at end of life and in waste streams are proposed to be removed from the treaty amendments. In addition, language was included stating that "restrictions or replacement of halogenated materials to reduce POPs are not effective."

Discussions about adding 7 new chemicals to the POPs Protocol also continue. These include four chlorinated chemicals, two brominated flame retardants (pentaBDE and octaBDE), pesticides and a collection of fluorinated compounds (PFOS and related salts). The debate will be whether these chemicals will be banned completely or whether there may be some exemptions for certain uses/applications. A final vote on the draft amendments will take place in December 2008.

Success for the 7th Euro Chlor Technology Conference and Exhibition



A Panel speaks at a Technological Session at the Conference.

The seventh edition of the International Chlorine Technology Conference & Exhibition can be considered as a success for the chlorine industry; it set a new record with more than 320 participants from 31 different countries. Twenty percent of the participants came from outside Europe and represented 12 different countries, including Japan, India, and North and South America.

Also, the scope of the technology and services suppliers' session was expanded. Additionally, 19 technology presentations that complemented the exhibition were held in parallel with more than 35 chlorine-related equipment and service suppliers.

The Euro Chlor sessions gave the audience updated information on the work done by our association on traditional topics like the safety of chlorine production, transportation and use, protection of the health of workers and the general public and environmental protection.

Several presentations focused on energy-related issues, due to their potential to have major impact on the sector's future.

The very positive feedback we received and the suggestions made will help us in preparing the next event we will plan in 2011.



Conference participants visit the various booths at the Exhibition

Global Safety Team: Activities in 2008

In May, The Global Safety Team (GST) issued the second of its quarterly newsletters for 2008. The primary purpose of these newsletters is to share information about past accidents associated with the production, distribution, and use of chlorine. The May issue described some past cell, cylinder, and gasket incidents. Past newsletters have described other incidents, such as the February issue, which described one chlorine release incident in a public indoor swimming pool due to the mixing of bleach with an acid and another chlorine release during a plant start up after a turnaround.

The GST Newsletter is issued quarterly to the members of the World Chlorine Council. In turn, many of the WCC member associations or their members translate the Newsletter into their native languages for distribution to that association's members.

Mainly, the GST is a forum to share information about best practices and past incidents with the goal of preventing injuries and chlorine releases.

Other GST Activities in 2008:

- The team approved and issued the Always and Never Poster for Packaged Chlorine.
- The team has developed guidance documents pertaining to key activities undertaken by companies belonging to WCC member associations. The draft of the first such document is being circulated for review to the team members. This first product is titled *Procedures for Loading and Unloading Liquid Chlorine Containers* and will be posted on the WCC website later this year. The intent of this guidance document is to provide WCC recommendations for loading and unloading of chlorine containers for facilities performing such operations in areas of the world where no technical trade association exists.
- The GST is updating its Ambassador program. The Ambassador Program is an outreach program to provide new and not so new producers, users and distributors of chlorine with safety and stewardship information and to strengthen networking between industry contacts, primarily in countries where there are no active WCC associations. Ambassador information packets are available from your local association.

WCC Responds to New Science

The WCC Science Team has reviewed a new study that may influence global policies:

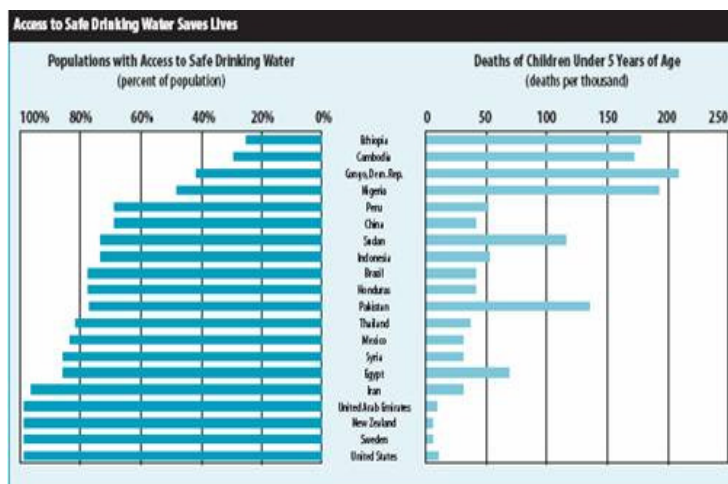
Disinfection Byproducts and Alleged Health Effects: A new study by Hwang et al. suggests that prenatal exposure to a class of disinfection by-products (DBPs) increases the risk of heart and brain defects and cleft palate in children. However, due to weaknesses in the study design and an unorthodox statistical analysis the authors' conclusions are unsupported.. Unfortunately, the authors' overstated findings only serve to misinform the public.

“Chlorination of drinking water has been a cornerstone of efforts to prevent the spread of waterborne disease for a century.”

-World Health Organization

Scientists have found that all disinfectants can react with naturally occurring organic material in water to form DBPs. Chlorination by-products, in particular, have been studied extensively. A comprehensive “weight of evidence” review of available studies (Tardiff *et al.*, 2006) indicates no relevant association between these DBPs and a wide array of birth defects, including those investigated by Hwang et al.

Chlorination of drinking water supplies is widely acknowledged as one of the major public health advances of the last century. Where adopted, drinking water chlorination has helped to virtually eliminate deadly waterborne diseases such as cholera and typhoid fever. The World Health Organization (WHO) stresses that water disinfection should not be compromised in order to prevent the formation of DBPs because the benefits of disinfection far outweigh possible risks. Reassuringly, international and domestic government agencies have established science-based regulatory standards and guidelines for drinking water. The U.S. Environmental Protection Agency standards for DBPs have been endorsed by a broad range of public health agencies, environmental groups and drinking water utilities. Internationally, the WHO has evaluated scientific research on DBPs and to date has concluded that existing data are not sufficient to show that these by-products are harmful to human health.



This chart demonstrates that access to safe drinking water can lower the risk of death in children.

Chlorine and Asthma

In recent years, some studies reported a possible link between chlorinated indoor pools and childhood asthma. In 2007, working with the industry's Research Foundation for Health and Environmental Effects, the World Chlorine Council (WCC) sponsored an Expert Workshop of leading scientists, academicians, and clinicians to review key topics on swimming pools and disinfection by-products. These experts have prepared and submitted a manuscript to a peer review journal. The experts identified important gaps in exposure assessment and the characterisation of asthma that need to be filled before establishing a clear association.

WCC is sponsoring some of the projects suggested by the experts to extend research on this issue, notably on improving analytical methodologies for evaluating air and water quality at swimming pools and additional epidemiological investigations. Given the current opinion that there may be suggestive but not conclusive evidence of an association between childhood swimming and new onset asthma, WCC continues to promote the proper maintenance, proper ventilation, and proper use of disinfection chemicals at swimming pools.



Safe Water Partnerships Help Save Lives

The Partnership



A child gets clean water from a new pump in a West African village.

The World Chlorine Council has long supported partnerships that help increase access to safe drinking water by providing essential products of chemistry. Jeffery Sloan, Director of Sustainability Programs at the Chlorine Chemistry Division of the American Chemistry Council, recently visited several West African communities that are benefiting from the organisation's partnership with the West Africa Water Initiative (WAWI).

During his trip, Jeff was able to accompany World Vision representatives to well dedication ceremonies, visit with residents of the villages and witness the construction of new wells. For additional information and pictures of Jeff's trip, visit http://worldchlorine.org/publications/pdf/West_Africa_Water_Initiative.pdf.



Villagers test a new water pump.

WCC Expands its Efforts

The Partnership began in 2002 when WCC pledged to donate \$300,000 worth of PVC pipe to construct wells in West African villages. Though WCC has fulfilled its original commitment, the organisation has decided to expand the Partnership to support household water treatment initiatives.

This new facet of the Partnership was announced on June 10 at an American Chemistry Council event in Washington, D.C. The event celebrated the 100th anniversary of disinfecting water by chlorination in the United States, which resulted in the eradication of water-borne diseases like cholera, typhoid and dysentery. With this expanded partnership, WCC hopes to help provide the benefits of disinfected water to communities in West Africa where these diseases claim thousands of lives each year.

New activities include simple household techniques to disinfect and store water that will significantly improve health in West Africa. Further commitment has been made possible by WCC member companies, who have generously donated additional funds to implement these programs and brought the total industry contribution to WAWI to more than \$500,000.

REACH Regulation Fully Launched

Within the general framework of the Registration, Evaluation and Authorization of Chemicals (REACH) legislation on the environmental safety and health effects of 30,000 chemicals, Euro Chlor, supported by member company experts, has been preparing the pre-registration (starting June 1, 2008) as well as the registration of 17 business-critical chlorine related chemicals, which should be accomplished before December 2010. Discussions have been driven by the need for harmonisation and simplification of the process of registration. Information from previous risk assessments (at EU and OECD levels) and biocides registration dossiers will be used. This material has to be updated and streamlined according to the REACH format.

For most of the 17 chemicals, preliminary agreements have been signed expressing the intent to form Consortia. Euro Chlor is focusing on a number of procedures to be fine-tuned and discussed together with all the members of the Consortia. Full agreements will then formalise the Consortia's activities. Finally, quite a few non-members that have contacted Euro Chlor to join the REACH work will be admitted to the Consortia.

Varying from one Consortium to another, the reuse of data previously compiled on a number of chemicals will drastically reduce overall cost of the registration. However, additional costs will be generated by the administration and the management performed by the lead companies, who agreed to manage the REACH-dossiers. Costs will be equally shared. Should additional testing be needed, the cost will be shared based on production volumes.

For more information on REACH, visit <http://www.eurochlor.org/index.asp?page=730>.



Asia Pacific Goes *Green*

For manufacturers and importers of building materials in the Asia Pacific region it is no longer an option, but a necessity, to engage in the increasing trend toward sustainable building. The varying approaches across the region toward green building include both government regulation and non-government influences such as regional green building councils.

The materials sector is impacted both directly and indirectly by various forms of government regulation. For example, the Indian government has established the Energy Conservation Building Code (ECBC), a mandatory code that, among other objectives, requires the building and construction sector to use materials that conserve energy. In Korea, the Ministry of Environment has developed the Green Building Certification Criteria (KGBC) - building tools that cover offices, schools, and multi-unit residential buildings.

In Taiwan, the Ministry of the Interior is operating a well developed Green Building Label, of which currently 1300 projects have been accredited, or are pending accreditation. Materials that are considered healthy, ecological, reused or high performance fare better under the label.

The increasingly influential World Green Building Council continues to gain members from the Asia Pacific region. While Australia, China, India, Japan, New Zealand and Taiwan have established Green Building Councils and Vietnam is an emerging member, South Korea, Philippines, Singapore, Malaysia, China and Thailand have expressed interest in developing local chapters.

While the increased focus on best practice is encouraging, challenges for the local industries include the problem of subjective criteria being introduced into building rating schemes or regulations. This can result in simple prescriptive criteria that may or may not improve environmental outcomes.

In one example, the South Korean government is introducing a bill to restrict the use of PVC in the pipe systems of buildings, due to a belief they are a major cause of fire spreading and toxic gas release during fires. In Taiwan the Building Material Label System encourages the minimisation of PVC pipe, and Australia's Green Building Council has a building rating tool – Green Star – that awards points for the minimisation of PVC.

The task for the Asia Pacific PVC industry, in addition to combating misinformation, has been to emphasise that its products have a role to play in sustainable building. The benefits of PVC include reducing carbon emissions, thermal efficiency, de-materialisation, durability, low maintenance and recycling. The industry also continues to emphasise that the PVC industry contributes to a sustainable economy through employment and housing affordability.

In one success story, studies in Japan demonstrating the potential of double glazed PVC windows to lower building CO₂ emissions compared to traditional windows, resulted in Japan's Ministry of the Environment demonstrating strong support for PVC windows by installing them in the Ministry building.

There are increasing opportunities for materials like PVC due to the growing interest in sustainable building in Asia Pacific nations and also between nations. Significant relationships to promote green building initiatives are being developed. Recently, the Australian Government's department of Innovation, Industry, Science and Research announced the funding of an Asia Pacific Partnership to support collaborations on high performance buildings and developments. The fund aims to accelerate the reduction of greenhouse gas emissions across the Asia Pacific.

The momentum continues to grow. This year China will demonstrate green building innovations in its Olympics infrastructure. Such developments provide opportunities for industry to both review its own practices and also demonstrate the environmental benefits of its products. WCC and the Global Vinyl Council are working with their members and local producers around the world to ensure that green building programs and criteria recognize the benefits of chlor-vinyl and halogen based products.

