

Hexachlorobenzene

Chemical 'time bomb' threat

Patrick Walter

As many as 7m people in Ukraine and Moldova are being put at risk by poor storage of a stockpile of the chemical hexachlorobenzene (HCB), the International HCH and Pesticides Association (IHPA) has warned. The IHPA director, John Vijgen, spotted the chemical 'time bomb' while examining *Google Earth* maps. Vijgen noticed that the landfill site holding more than 10,000 t of the chemical was dangerously close to a tributary of the Dniester river.

Vijgen says that the Kalush factory in the west of Ukraine is only one serious flood away from releasing HCB into the watercourse of the Dniester, the main source of drinking water for Moldova.

HCB is highly toxic to aquatic life, and the International Agency for Research on Cancer has listed it as a potential human carcinogen. It was formerly used as a fungicidal seed treatment agent, but is now banned under the Stockholm Convention on Persistent Organic Pollutants. In one infamous case in Turkey, between 1955 and 1959, more than 500 people died after eating bread made from wheat seed treated with HCB.

The Kalush site is only extraordinary in the Ukraine for the size of the pesticide stockpile. According to



HCB: chemical threatens river

Ukrainian figures, there are 4500 sites across Ukraine holding more than 30,000 t of obsolete pesticides. All together, across Eastern Europe, Russia and the former Soviet Union countries, as much as 263,500 t of obsolete pesticides are thought to exist.

Vijgen says that a large part of the problem is obtaining accurate information on these stockpiles. 'The real issue is countries sometimes have a lot of numbers but if you don't go into the field you don't know what's really out there. In many of the former Soviet Union Republics, some data are 20 years old.' He adds that, as recently as 2003, Ukraine estimated its obsolete pesticide stockpiles as 10,000 t – a

third of up-to-date estimates.

The trouble is that economic development always takes priority over these kinds of environmental problems, Vijgen says. 'I talk to environment ministers and they don't have the means to act.'

He says that it is much cheaper for countries to attack the problem now rather than respond to contamination events. The IHPA estimates the cost of cleaning up all 263,500 t of obsolete pesticides at around €800m. By contrast, the 2002 food scandal in Germany, where chicken feed was contaminated with the illegal pesticide nitrofen, cost the country about €500m.

But Vijgen says that this problem is not insurmountable. 'It's very simple to tackle the problem, but it's not sexy,' he says. The IHPA and its Dutch partners Milieukontakt International and Tauw, train people to track down obsolete pesticide stockpiles, so that they can be stabilised and repackaged for destruction. Poland has already cleaned up 10,000 t of obsolete pesticides with its own funds, he adds. 'You have to be the boss in your own house; you have to take responsibility for the problem yourself.'

Economic downturn

Tough times for EU chemicals

Patrick Walter

Christian Jourquin, ceo of Solvay and European Chemical Industry Council (Cefic) president, told delegates at the Cefic Global Chemical Industry European Convention in Lisbon, Portugal, that the EU chemical industry is 'facing an unprecedented challenge'. 'We cannot just be satisfied with green shoots,' he said. 'We are not out of the recession.'

Jourquin went on to say that, while there are tentative signs of recovery, it may be years before the EU chemical industry returns to its January 2008 performance. What he is looking for now is a long term vision for the industry

from governments to create an environment that will enable chemicals to flourish in Europe.

Theo Jan Simons, global chemical industry lead at Accenture, speaking at a forum on the downturn, agreed that the chemical industry is facing difficult times. He noted that EU chemical output, relative to GDP, has seen an accelerated decline. He attributed this to the production of more durable products, greater recycling and companies moving production facilities outside the EU.

Simons said that to counteract this trend companies 'need to take growth and sustainability to the

next level'. Pointing to differences across the world in resources, regulation and climate levies, Simons added: 'The world is not flat; there is simply no such thing as fair competition.' He also warned of a looming 'war for talent' with most engineering graduates now being educated outside the developed economies.

Jourquin said that climate change remains the world's biggest problem and that it is here that the EU chemical industry can excel. 'We should not forget that there can be no low carbon future without the chemical industry.'

News in brief

A leading academic at a top Swiss research institution is set to resign as head of research in the wake of an investigation into scientific misconduct. Peter Chen has been vp research and corporate relations at ETH Zurich since 2007, but will step down at the end of September. The ETH Zurich team that conducted the investigation found that two research papers and one doctoral thesis published by Chen's group in 1999 and 2000 contained falsified data. The papers relate to structural analyses of short-lived hydrocarbon radicals by 'zero kinetic energy photoelectron spectroscopy'. According to the institution, the fraud came to light when external groups working in the same area tried to replicate the experiments and obtained significantly different results. The investigation found identical patterns of signal noise in different datasets in separate publications. The publication of the report has been postponed for 'legal reasons', and no one has yet admitted misconduct, but all involved agree that the data have been falsified. Chen will continue to work at ETH Zurich.

Thousands of rabbits could be spared the most painful eye tests thanks to international acceptance of alternative testing methods. The Organisation for Economic Cooperation and Development (OECD) has approved two non-animal tests for eye irritation, the bovine corneal opacity and permeability (BCOP) test and the isolated chicken eye (ICE) test, which it describes as 'reasonably and practically available'. This means that EU regulatory bodies should insist that these tests are used to screen out severe irritants before the Draize test, which typically involves live rabbits, is used. In the EU, over 4500 rabbits are used in eye irritation tests every year, according to UK charity the Dr Hadwen Trust.