Putting the freeze on hazardous waste

Neil Nixon reports on a ground-breaking technology that is revolutionising the containment and disposal of hospital waste around the world…and is now available in the UK.

CERTAIN areas of hospitals – most significantly laboratories and oncology departments – produce particularly harmful waste, containing contaminants such as formaldehyde. The perennial problem of disposing of this waste in a way that protects air quality and, therefore, occupants of the laboratory or ward, has posed a considerable challenge – a challenge also faced by independent medical laboratories, medical research facilities, and even veterinary surgeries.

With 11 years of tried, tested and verified performance in the international market, Crioges is now expanding into the UK market. Over 2600 units are already operational in over 150 hospitals and 200 health centres around the world. As Matt Edwards, head of Crioges UK, explained: "We offer to install the units on a free trial and in 11 years we have never been asked to remove a unit once the trial period has been concluded."

What is Crioges?

Crioges is a patented system designed to address the risks associated with the production of hazardous and dangerous waste in specific designated areas, including both biological and chemical emissions. This is the key to achieving environmental biosafety in those specific hospital or laboratory areas where toxic waste production is most concentrated.

In layman's terms, the equipment works by applying an autonomous cold-freezing process with incorporated photocatalytic oxidation to significantly reduce the exposure of personnel to organic compounds and biological agents. The waste container is accessed by a lid on top of the unit which, thanks to negative pressure created by the freezing process, will not allow any contaminants to escape while in use. Additional wall-mounted air purification units can be added in areas of particularly high waste concentration to ensure a safe environment for all facility users.

Eduardo Toro, inventor and founder of Crioges, said: "This is the only system on the market that cancels the sources of emission from contaminated residues and purifies the air continuously, eliminating the risk of dispersal of dangerous contaminants."

It is important to remember that Crioges does not dispose of the waste - this will continue to be managed as it has been in the past. Crioges is a system that is integrated into the hospital infrastructure for the maximum protection of people and the environment. Eduardo Toro continued: "We are not setting out to alter how waste is managed, we are just removing any hazard from the waste handling process."

Crioges in practice

The Crioges system has been tested and reviewed by healthcare institutions across the world, and numerous testimonials are available online at: www.crioges.com.

The Hospital Francesc de Borja has so far installed 21 units in different areas that are protecting both healthcare personnel and facility users from exposure to volatile organic compounds such as formaldehyde or xylene and biological agents such as bacteria, viruses, moulds, and fungi - essentially improving the environmental air quality of the space in which they are located.

Among the advantages experienced at this facility, the reduction in the airborne risk to personnel stands out since aerosols and vapours from hazardous waste are eliminated. It also reports minimal environmental contamination, whether chemical or biological, creating biosecure spaces and avoiding accidental spills and cross-contamination from waste content.

Units are leased to facilities under a full service contract that provides users with a guarantee of consistent quality. Maintenance is also covered although there is very little to go wrong within the units, so this is more for peace of mind than any real need for ongoing repair or servicing. When a unit or series of units is installed in a facility an independent air quality assessment is conducted ahead of a one-month free trial. At the end of the first week of the trial, a second independent air quality assessment is conducted. An air quality improvement in excess of 75% is usual at this stage. In a particularly concentrated environment, such as an oncology ward, the air quality improvement frequently exceeds 85%. In laboratory settings where formaldehyde is being used in high concentration, air quality improvements of between 75-98% are normal.

Arrival in the UK

This unit is now being introduced across the UK and benefits from a proven track record developed over 11 years. There are currently no alternatives to this system so its success here should be assured. Anyone wishing to set up a free trial should contact Matt Edwards at: matt@crioges.co.uk.

WWW.CRIOGES.COM

Neil Nixon speaks with Dr Luis Mazon Cuadrado from Hospital Universitario Fuenlabrada – a long-term user of the Crioges system.

How long have you been using the Crioges system?
Approximately five years.

What improvements has it made to operations within your hospital?
It offers greater safety to workers against carcinogenic agents such as formaldehyde, xylene and provides greater safety in the handling of cytostatics. In addition, environmentally it reduces our carbon footprint and economically it improves the management and cost of hazardous waste disposal.

What systems/processes has it replaced?
It's a complementary system - there is no system on the market that unifies cryo-freezing with photocatalysis.

What impact do you believe it has had on patient and staff safety?
From the studies we have done, we know that it reduces the levels of formaldehyde, xylene and more than 50 other volatile organic compounds. Breaking the covalent bonds of these chemicals and passing them through titanium dioxide in spheres and zirconium dioxide in spheres generates non-toxic residues, eliminates the foul odour characteristic with autopsy rooms, and is also effective against other agents such as Mycobacterium Tuberculosis.

Would you recommend the system to other institutions dealing with hazardous medical waste?
Yes, without a doubt. We have already done so in the Madrid Health Area and throughout Spain.