CyanoKit®, the fastest and easiest test for reliable on-site cyanide detection.

Results in Brief

Improved detection test for cyanide management

Cyanide is present naturally in over 2 500 plants and frequently used in the electroplating, metallurgy, chemical manufacturing and mining industries. One of the most lethal chemical substances known to mankind, it must be correctly managed to avoid adverse impacts on the environment and society.

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More than 1.1 million tons of hydrogen cyanide is produced around the world each year for mining and industrial processes. The widespread use of cyanide coupled with the limitations of current analysis and monitoring technologies, raises serious concerns regarding public safety and environmental protection.

Waste from cyanide industrial solutions is usually stored in large ponds, but these can leak, overflow or fail catastrophically, posing threats to underground drinking water supplies, human beings and wildlife ecosystems. Over the past 25 years, more than 30 major accidents involving cyanide spills have been reported worldwide. Much of the damage caused by such incidents could have been avoided if faster and reliable monitoring methods had been available.

Faster, simpler and more accurate

Currently, the detection of cyanide relies on lengthy procedures carried out in

specialised laboratories. This requires expensive equipment and highly trained staff. Furthermore, the high reactivity of cyanide and its related compounds means sample analysis is difficult, often resulting in significant errors in the data. There is an urgent need for new ways to properly manage cyanide, so companies can minimise the chance of environmental damage and avoid negative publicity.

The EU-funded Horizon 2020 project CyanoKit addressed this threat, developing a simple, fast, safe, reliable and affordable cyanide testing solution to improve cyanide management and ensure safety. “We created a technology platform for eventually developing tests to detect cyanide in blood, food and virtually any kind of toxin like heavy metals,” says Benedikt Kirchgaessler project coordinator and managing director of chemical technology company CyanoGuard AG.

Better detection for better safety

The innovative CyanoKit technology can be applied in nearly any field, detecting cyanide 98 % faster and more reliably than available methods. The test is also easy to use, making it suitable for a wide range of users, from specialised chemists to farmers. According to Kirchgaessler: “It is not only suited to industries where cyanide is used on a daily basis, but also new environments such as cassava crops and hospitals, driving improved outcomes since test results, and subsequently effective management, can be delivered faster and cheaper.”

Following feasibility studies, CyanoKit is now improving the cartridge design of the test kit and developing a mobile device to improve colourimetric readouts. It is also creating an online-platform for streamlining data collection and analysis as well as automating the assembly process for scaling-up purposes.

A commercial test

An important element of CyanoKit´s marketing strategy are large industry associations, governmental authorities, and technical consulting/engineering companies, which often make recommendations and indirectly push decisions regarding the process structure and the technology used for toxin detection. Kirchgaessler observes: “The general sales approach follows the cyanide value chain."

The test developed by CyanoKit excels in terms of selectivity, sensitivity, handling and speed of detection. CyanoKit® is the fastest cyanide detection test on the market and is competitively priced compared to any other test. “The rapid, accurate, and safe detection and quantification of cyanide in water will help companies to control the quality of their internal processes, comply with regulations, and ensure the absence of toxic substances in their wastewaters,” concludes Kirchgaessler.

Keywords

CyanoKit | cyanide | test | management | industry | colourimetric

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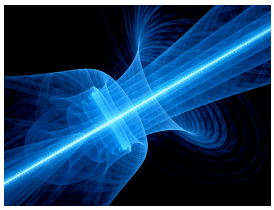

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CyanoKit

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