

Script for explanation of anti-*Legionella* association announcement poster

Hello everyone.

I'm going to talk about the "Registration System of Anti-*Legionella* Chemicals and Results of External Quality Assessment for *Legionella* Testing."

The Japan Association of Anti-*Legionella* Chemicals for Cooling Water was established in June 1991 in Japan by private water treatment companies with the goal of providing effective, highly safe anti-*Legionella* water treatment chemicals and disseminating correct knowledge regarding *Legionella* contamination of water environments. Currently there are 17 member companies. Our activities include public awareness initiatives to prevent Legionnaires' disease, maintenance of an anti-*Legionella* water treatment chemical registration system, and activities intended to improve the precision of *Legionella* testing.

First I would like to introduce our public awareness initiatives aimed at preventing Legionnaires' disease. We put together the "Guidance on Prevention of Legionnaires' Disease in Cooling Water Systems" for cooling tower managers, and have been distributing it since 2001. We also offer information on the prevention of Legionnaires' disease via a website, and conduct public awareness activities to prevent Legionnaires' disease in cooling water used in air conditioning.

Next I will explain our anti-*Legionella* water treatment chemical registration system. We standardized the methods used by each company to evaluate the effectiveness and safety of water treatment chemicals, and in 1992 established voluntary standards for anti-*Legionella* cooling water treatment chemicals. These voluntary standards comprise (1) Objectives, (2) Applicable scope, (3) Confirmation of efficacy, (4) Confirmation of safety, (5) Labeling items, and (6) Prevention of environment contamination through discharged water. Since 1993 we have operated a system for registration of products that comply with these voluntary standards, and published a list of registered chemicals of the Association. This list of registered chemicals is revised with products added and removed as required, and the latest version can be viewed on the website. Currently there are 174 chemicals registered. The efficacy of registered chemicals against *Legionella* is indicated by tabulating the results of *Legionella* testing conducted by each company. The graph in the center of this poster shows the ratio of *Legionella* detected at 100 CFU/100 mL or higher in registered chemical treatment systems and systems not treated with disinfectant based on *Legionella* testing data for cooling water systems for the 10-year period from 2011 to 2021. Each plot is the result of analyzing over 10,000 data items. We know that the registered chemical treatment systems are more effective at suppressing the growth of *Legionella* than untreated systems.

Next I will explain our activities aimed at improving the accuracy of *Legionella* testing. *Legionella* testing is vital to understanding the state of *Legionella* contamination in target water systems and evaluating the efficacy of measures against it, and thus must be highly accurate. We are working to improve the accuracy of the *Legionella* testing undertaken by member companies. While *Legionella* testing methods are based on those listed in ISO 11731:2017, there are slight differences in the methods employed by each company. We endeavored to standardize testing methods in order to improve the accuracy of *Legionella* testing in cooling water systems. Details on the standardized testing methods are available on the website. Since 2013, when standardization improved the testing methods of each member company, we have participated in the External Quality Assessment for *Legionella* Isolation run by Public Health England (now the UK Health Security Agency). The standardized testing methods were revised in 2015 in order to achieve greater testing accuracy. The results of these efforts are shown in the graph in the lower section of the poster. Although there is variation apparent in the results from each company, there is a trend towards improved Z scores apparent since the 2015 revisions to testing methods. The Association has established a system to certify member companies that participate in **the external quality assessment** and meet certain standards. The blue certification mark at the bottom right of the poster can be displayed on testing results reports and other documents issued by member companies that have received this certification.

Going forward, the Association will work to improve the accuracy of *Legionella* testing on which sanitary management of cooling water systems is based. Additionally, we will move ahead with public awareness activities regarding measures against *Legionella* ~~bacteria~~ and work to prevent Legionnaires' disease, which is transmitted through cooling water systems.

Thank you **very much**.