PRAGMA
CHIMICA

LEGIONELLA PREVENTION AND CONTROL

ANALYSIS / SOLUTIONS / PRODUCTS

WHAT IS LEGIONELLA?

Legionella is a **slender, aerobic bacterium** that is the main cause of a lung infection called Legionellosis, also known as Legionnaires' Disease. **More than 60 different species** of Legionella have been identified, encompassing 71 serotypes. In Italy, most of the confirmed cases (over 3,000 per year, according to data from the Istituto Superiore di Sanità, 15% of which are fatal) are caused by Legionella Pneumophila.

The bacterium can be found in city water distribution networks, buildings' water systems – especially in large facilities with centralised hot water distribution systems (e.g. hospitals, retirement homes, hotels, sports and spa centres), – fountains, Turkish baths, saunas, etc. **It is very common** to find it in industrial plants equipped with cooling towers and/or in condensation water of air conditioning systems.

Legionella bacteria infect humans through the mucous membranes of the respiratory tract following inhalation of contaminated aerosols. After an incubation period of 2 to 10 days, the disease manifests with high fever, headache, cough and a pulmonary presentation that cannot be distinguished from other forms of pneumonia.

The **development conditions** for Legionella include:

- Water temperature between 25-42 °C
- Stagnation in tanks and pipes (biofilm formation)
- Scaling of pipes, taps, showers
- Presence of sediments and organic material
- Presence of trace elements (Zn, Fe, Mn)
- Presence of algae and aquatic amoebae

THE ROLE OF PRAGMA CHIMICA

Pragma Chimica is capable of developing Legionella **prevention and control protocols** for its clients to **ensure the safety** of both water and air exchange systems in the facility.

Some of the **services offered** include:

- Specific plants and chemicals for Legionella risk control
- Preliminary analysis and document for prevention and control
- Circuit remediation, with analytical verification of the effectiveness of the treatment performed
- Periodic maintenance checks
- Bacteriological analyses of cooling systems, hydraulic and aeraulic circuits
- Training of internal staff

Stabilised chlorine dioxide dosing system with activator and protective film for sanitary water. All pre-assembled on an IP65 protection box with data and error communication system via Ethernet module.

Stabilized chlorine dioxide dosing system with activator and protective film for sanitary water, with data communication and error reporting system via Ethernet module.

REGULATORY ASPECTS

An important novelty, in the sphere of prevention and control of legionellosis, is represented by Legislative Decree No. 18 of 23 February 2023, Implementation of Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the **quality of water intended for human consumption** (14), with which Italy has implemented the European Directive (15). The measure entered into force on 21 March 2023.
The aim of the new drinking water directive is to guarantee access to safe water used in living and working places and to prevent the risks associated with the various possible routes of exposure; for the first time, monitoring of Legionella in drinking water is therefore introduced.

Waters intended for human consumption must be salubrious and clean. Waters are salubrious and clean if they meet the minimum requirements established in Annex 1, Parts A, B, and D. Legionella values > 1,000 CFU/L make water intended for human consumption non-compliant. In Part D of Annex 1, the Legionella parameter is present: Part D refers to the parameters relevant to the evaluation and management of internal water systems, and these parameters are not part of the indicative parameters.

Water Distribution System Managers (in Italian, *Gestori idrici della distribuzione interna* or GIDI) carry out **risk assessment** and management of internal water distribution systems of buildings and priority premises, with particular reference to Lead and Legionella parameters, adopting necessary preventive and corrective measures (Article 9 paragraph 1). For buildings in category E (condominiums, excluding premises of categories A, B, C, and D), it should be noted that the absence of obligations regarding DVRs and analyses does not reduce the responsibility of the GIDIs. Furthermore, for complexes used as workplaces, provisions regarding Legionella exposure assessment must be applied (ISTISAN 22/32, chap. 8 pg. 94).

It should be noted that, as set forth in Legislative Decree 81/2008 and subsequent amendments and additions, the risk of exposure to Legionella in any work environment requires the implementation of all appropriate safety measures to exercise the most complete **prevention and protection** activities in respect of all those present, considering that in Title X of the aforementioned Legislative Decree 81/2008 Legionella is classified in group 2 among pathogenic agents.

Prevention is the most effective way to control the risk of Legionella contamination: our expert consultants are at your disposal to help you find the best solution.

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